MIDWEST DEALER ISSUE
Pages 14-28

Croplife®

FOR RICHER FIELDS

WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

Vol. 3 | Subscription Rates: $5 for 1 year, $9 for 2 years | MARCH 5, 1956 | Accepted as Controlled Circulation Publication at Minneapolis, Minn. | No. 10

ypsy Moth Infests 750,000 New cres in Two Years

Areas in Eastern States, Michigan Hit, USDA Reports

WASHINGTON — Tree-attacking psy moths have spread to some 50,000 previously uninfested acres Vermont, New York, Connecticut, w Jersey and Pennsylvania, and a small spot in Michigan during past two years, the U.S. Depart- nt of Agriculture has reported. fore 1954, the insect was found on me 30 million acres in New Eng- d and New York.

A summary of 1955 gypsy-moth nditions is included in the weekly operative Economic Insect Report ued by USDA's Agricultural Re- rch Service. This insect or its gs have been found at points be- nd previously known southern and stern limits of gypsy-moth infes- tion in recent surveys—from Long land to limited areas in northern w Jersey and northeastern Penn- vania, to the southern foothills the Adirondacks and west to ica, in the Mohawk Valley of New rk. Limits of recent spread cannot conclusively determined until re extensive trapping is done, DA says.

The gypsy moth feeds on many kinds trees and shrubs. Accidentally re- sed in this country in 1869, it was fined to a limited area for more n 80 years until the worst out- ak on record occurred in 1953. deral and state quarantines are in ect aimed at preventing the in- t's spread through commerce and nsportation. Because of the re- t survey findings, revision of the a under regulation in the federal arantine is being considered.

Vigorous control measures have estricted estimated losses from

(Continued on page 33)

Peanut Acreage Allotments Boosted For 1956 Crop

—See Table on Page 33—

WASHINGTON — An increase of 40,342 acres in allotments for states producing Virginia and Valencia types of peanuts in 1956 has been announced by the U.S. Department of Agriculture.

These states include Alabama, Florida, Georgia, New Mexico, North Carolina, South Carolina, Tennessee and Virginia.

Last October, USDA announced a national allotment of 1,610,000 acres for all types of 1956-crop peanuts. The increase raises the national total for all types to 1,650,342 acres. The table on page 33 shows by states the 1956-crop allotments.

Soil Bank Seen as Having Little Effect On Industry in 1956

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—With time rapidly running out as Congress dillies and dallies over the pending farm legislation it may be appropriate that the fertilizer and pesticide industry throw all conjectures on the effect of the soil bank proposal on their sales this year out the window.

As of now it's anyone's guess on the date that a bill can get through Congress for presidential approval. The senators are talking—letting off steam on their pet projects—largely for the record that they can take back to their constituents.

The position of this reporter is unchanged that the high rigid price support provisions of the Senate Bill S. 3138 will be defeated on the Senate floor. But what can happen after that in a conference between the two chambers is strictly crystal-ball gazing.

However, the probable composition of the membership of the conference committee indicates that if the House is adamant and insists on its version of high price support the Senate conferees will concur. That condition is confusion compounded.

It is still the responsible position of the Republican farm leaders that if the whole House gets a high price support bill there will be a veto which could not be over-ridden in the Senate. This possibility is said to have been strengthened last week when President Eisenhower expressed his willingness to continue the White House burden for another term—a

(Continued on page 37)

Southwestern Branch of ESA Hears Report of FDA Work; J. C. Gaines Named Chairman

By LAWRENCE A. LONG
Editor of Croplife

FT. WORTH — Some 250 persons were in attendance at the fourth annual meeting of the Southwestern Branch of the Entomological Society of America here Feb. 20-21. The meeting, held at the Texas Hotel, attracted entomologists and trade personnel from a broad area, with most of the conventioneers coming from Texas, New Mexico, Oklahoma, and from across the border in old Mexico.

Dr. J. C. Gaines, head of the department of entomology, Texas A&M College, College Station, was named to head the Southwestern Branch for the coming year.

He succeeds D. C. Earley, Port Fertilizer & Chemical Co., Los Fresnos, Texas. Other officers named included Harvey L. Chada, Denton, Texas, vice chairman and Sherman W. Clark, Texas Gulf Sulphur Co., Houston, secretary-treasurer. P. J. Reno, Hercules Powder Co., Dallas, and R. C. Bushland, Kerrville, Texas, were named to the governing board of the branch.

Over fifty prepared papers were on the two-day program. Subjects discussed at the sessions covered experiments with different toxicants, systemics, cultural control of insects, public health aspects of pest control and a resume of the operation of the Miller Amendment to the Food and Drug Act.

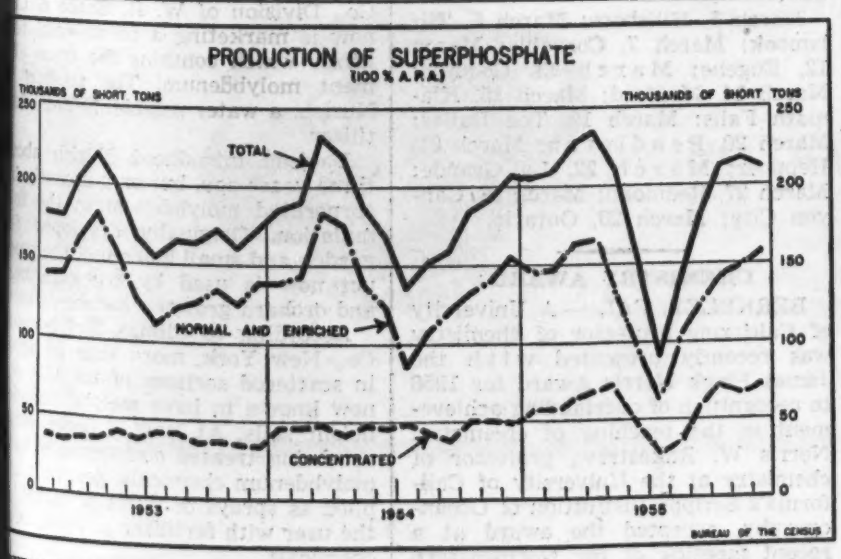
In discussing the Miller Amendment, R. E. Duggan, chief chemist of the New Orleans district of Food & Drug Administration told the group that despite some thoughts to the contrary, the new law does not change the basic requirement that foods in interstate commerce shall be free of dangerous quantities of pesticidal residues.

"There is no reason to suppose that there will be more seizures of foods in interstate commerce because of the amendment," he declared. "In a sense," he pointed out, "we have been operating under a system of unofficial tolerances since the passage of the Food and Drug Act in 1938." The new provisions of the act establish a more convenient method of determining what is a safe residue and announcing this tolerance to the public, he added.

In describing the activities of inspectors, he assured his audience that when a situation is to be investigated, "we will go in openly . . . and will make every effort to be helpful in connection with our inspectional activities, bearing in mind that our primary obligation is to the American consumer."

Mr. Duggan emphasized that the

(Continued on page 5)



SUPERPHOSPHATE PRODUCTION—Production of superphosphate in 1955 totaled 2,310,306 short tons, for a 3% gain over the 1954 output of 2,237,900 short tons, according to the U.S. Department of Commerce. Monthly production is shown on the above graph, prepared by the Bureau of Census, Industry Division, Chemicals Branch, Department of Commerce. See page 1 of the Feb. 27 issue of Croplife for the story.

Sales, Production of Coke Oven Ammonium Sulfate Gain in 1955

WASHINGTON — Production and sales of coke oven ammonium sulfate showed increases in 1955 from their 1954 levels, according to a preliminary report by the Bureau of Mines, U.S. Department of the Interior.

Production totaled 1,939,114,500 lb., compared with 1,645,636,400 lb. in 1954. Sales totaled 1,830,942,389 lb., a gain from 1,638,967,393 lb. in 1954.

The Bureau of Mines points out that although 1955 sales increased 12% over those of 1954, they were more than 100 million pounds less than production. As a result producers' stocks of coke oven ammonium sulfate totaled 404,945,429 lb. at the end of 1955, compared with 312,592,422 lb. at the end of 1954.

Inside You'll Find

Over the Counter 14
Farm Service Data 16
What's Been Happening 18
Oscar and Pat 20
Field Notes 21
What's New 22
Ringing the Cash Register 28
World Report 34
Editorials 38
Meeting Memos 39
Index of Advertisers 39

Olin Mathieson Has Record Sales, Earnings in 1955

NEW YORK — Record sales and earnings for 1955 were reported recently in a preliminary statement by Olin Mathieson Chemical Corp. Sales rose approximately 11% in 1955 over 1954 and earnings jumped 17%.

John M. Olin, chairman, and Thomas S. Nichols, president, noted a number of steps taken by the corporation to improve its activities in phosphate chemistry, cellulose chemistry and the nonferrous metals manufacturing fields. These included the addition of the phosphate chemical facilities of Blockson Chemical Co., Joliet, Ill.; the finalization of the company's plans to enter the primary aluminum industry, and the integration of the Brown Paper Mill Co. timber lands, paper mill and paper converting plants at West Monroe, La.

The statement noted that according to preliminary figures consolidated net sales of the corporation in the U.S. and Canada totaled $560,480,000 in the 12 months ended Dec. 31, 1955, rising from $502,478,000 in the previous year for an increase of approximately 11%.

Net profits advanced to a record high of $44,558,000 in 1955, up from $38,075,000 in 1954, an increase of approximately 17%. The 1955 profit was equal to $3.51 per common share, based on the average number of common shares outstanding during the year. This compared with $3.11 per share in 1954 on the smaller average number of shares outstanding during that year.

After payment of all dividends, the amount of net income reinvested in the business amounted to $19,607,000, or 44% of the net profit, compared with $17,472,000 or 46% of net profit in 1954. These funds will be used for expansion of existing facilities, for financing a part of the corporation's recently announced aluminum program and for other capital investments.

Total federal income taxes of the corporation amounted to $37,882,000 in 1955, up from $30,450,000 in 1954, an increase of 24%.

R. N. Conners to Head Bag Makers Unit Again

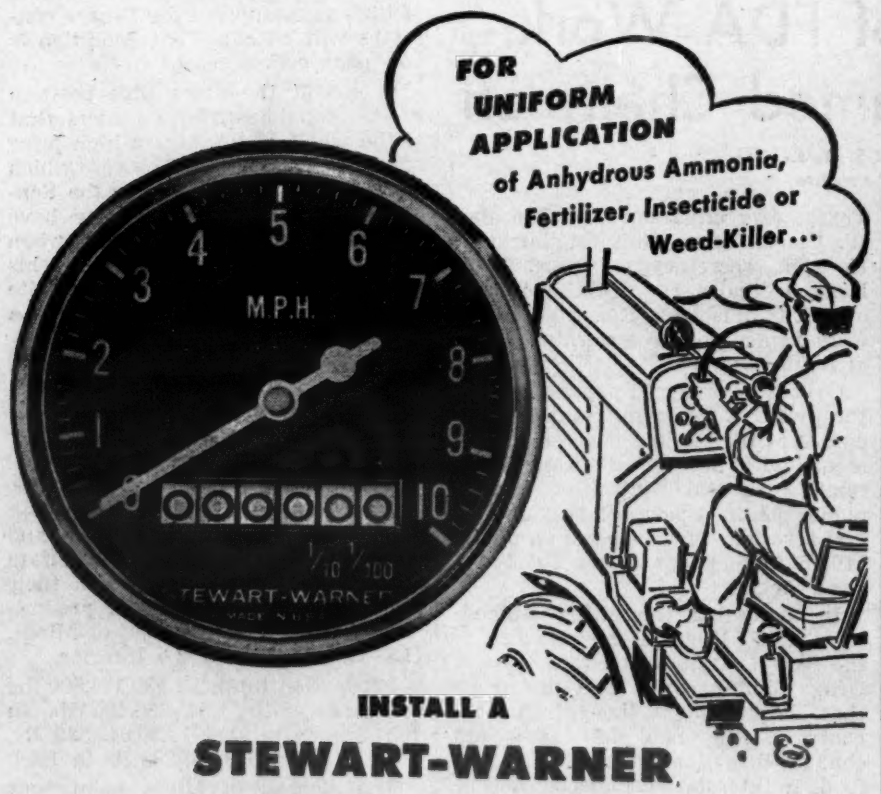
EVANSTON, ILL.—R. N. Conners has been reelected president of the Textile Bag Manufacturers Assn., it has been announced by the association. Mr. Conners is executive vice president of the Chase Bag Co.

T. J. Semmes, president of the Semmes Bag Co., Memphis, Tenn., was reelected vice president.

The association, comprising approximately 30 firms which make textile bags, is devoted to promoting the use of more textile bags.

MOSQUITO CONTROL MEETING

NEW BRUNSWICK, N.J.—Forty speakers will discuss new developments in mosquito control during the annual three-day meeting of the New Jersey Mosquito Extermination Assn. at the Chalfonte Haddon Hall in Atlantic City, March 7-9.



INSTALL A

STEWART-WARNER

FARM

SPEEDOMETER

Here's how a Stewart-Warner Farm Speedometer can help you save materials and improve crops:

1. Assures uniform distribution by accurately measuring over-the-ground speed and distance traveled. Can be installed on any tractor, fertilizer rig, spray rig, combine or other wheeled equipment.
2. Dial shows speeds up to 10 miles per hour in ⅛ mile graduations; records distance in hundredths of a mile (52.8 ft.).
3. Indicates instantly when adjustments in throttle setting or material flow are required—to maintain proper coverage.

STEWART-WARNER ADVANTAGES

Easy to Install! Universal mounting—can be used on any vehicle.

Sturdy! Mechanism enclosed in cadmium-plated steel case for protection against dust, rain, weather and shock.

Accurate! Designed and tested to assure true measurement of speed and distance over any type of terrain.

Inexpensive! Pays for itself in one season in material savings.

See your dealer, or write:

STEWART SW WARNER STEWART-WARNER

Instrument Division, Dept. CL-36
1840 Diversey Parkway, Chicago 14, Illinois

Hercules Announces New Managerial Positions For Sales Personnel

WILMINGTON — Four new positions for managerial sales personnel of Hercules Powder Co.'s Naval Stores Department were announced here recently by Paul Mayfield, the department's general manager.

The new posts are: L. E. Anderson, sales manager, oxychemicals division; Richard J. Both, manager, Chicago district office; P. J. Reno, sales manager, agricultural chemicals division, and Allen C. Gunter, manager, Dallas district office.

Mr. Anderson for the past four years has been manager of the department's Chicago district office. Prior to assuming that position, he spent five years as manager of the department's San Francisco district office. He joined Hercules in 1937.

Mr. Both, manager, Chicago district office, has been sales manager of the Naval Stores Department's agricultural chemicals division.

He joined Hercules in 1940, after graduating from Harvard. Since 1945 he has been engaged in sales work for the Naval Stores Department, and has made several extensive foreign trips to promote the sales of toxaphene.

Mr. Reno, sales manager, agricultural chemicals, has been manager of Naval Stores' Dallas office for the past six years. A major part of his duties there has involved working with various southwestern state and federal agricultural agencies, cotton growers and manufacturers of toxaphene dusts and sprays. Mr. Reno joined Hercules in 1941.

Mr. Gunter, manager, Dallas district office, joined Hercules in 1952, as a technical representative at the Dallas office. Prior to joining Hercules, he served as research entomologist with the Texas Agricultural Extension Service from 1947 to 1949, when he became extension entomologist at Texas A&M.

Weed Control Meetings Slated in Oregon

CORVALLIS, ORE. — A series of one-day weed control meetings for highway maintenance workers and commercial chemical weed control men has been scheduled in Oregon during March, reports Rex Warren, farm crops specialist at Oregon State College.

Each meeting will open at 9:30 a.m. and include discussions of the Oregon herbicide law, highway spray recommendations, uses of herbicides, ways to reduce spray hazards, and problems encountered in spraying weeds and brush.

Dates and places of meetings include:

March 5, Hillsboro; March 6, Tillamook; March 7, Corvallis; March 12, Eugene; March 13, Coquille; March 14, Medford; March 15, Klamath Falls; March 19, The Dalles; March 20, Pendleton; March 21, Heppner; March 22, La Grande; March 27, Redmond; March 28, Canyon City; March 29, Ontario.

CHEMISTRY AWARD

BERKELEY, CAL. — A University of California professor of chemistry was recently presented with the James Flack Norris Award for 1956 in recognition of outstanding achievement in the teaching of chemistry. Norris W. Rakestraw, professor of chemistry at the University of California's Scripps Institution of Oceanography, accepted the award at a recent meeting of the Northeastern Section of the American Chemical Society at the Massachusetts Institute of Technology. The award, given every two years by the Northeastern Section, is the only one in the field which specifically honors teaching.

CSC Sales, Net Earnings Gain; Expansion Planned

NEW YORK—Sales of Commercial Solvents Corp. during 1955 totaled $56,623,754, compared with 1954 sales of $51,608,349. Consolidated net earnings in 1955 were $3,451,813, a gain from $2,668,342 a year earlier.

The 1955 consolidated net earnings are equal to $1.31 a share, including extraordinary net income of 12¢ a share, on 2,636,878 shares of common stock. The 1954 net earnings represented $1.01 a share on the same number of shares.

J. Albert Woods, president, recently announced that the company plans to spend $10 million for expansion of its methanol and petrochemical derivatives facilities. The expansion will include new construction at the CSC Sterlington, La., plant and expansion of facilities at the Terre Haute, Ind. plant.

Dow Chemical Co. Opens New Office In Camden, N.J.

MIDLAND, MICH. — The Dow Chemical Co. has announced the opening of a new office in Camden, N.J., replacing the office formerly maintained in Philadelphia. The new office opened Feb. 27.

Located at 400 Market St. in downtown Camden, the office provides the necessary facilities for more effective servicing of markets in a six-state area, according to Donald Williams, vice president and director of sales.

Mr. Williams said that the Camden office will continue to handle the company's major product lines including general chemicals, plastics, agricultural chemicals and magnesium for customers in Pennsylvania, Delaware, Maryland, southern New Jersey, Virginia and West Virginia. The staff consists of 24 salesmen headed by Joseph G. Widua, manager, who joined the company in 1945.

Dow personnel will occupy the entire first floor of a new building consisting of 7,700 sq. ft., providing almost 75% more area than at the previous location at 1400 S. Penn Square in Philadelphia. A feature is teletype service linking the office with all Dow manufacturing operations in the company's private line system extending throughout the country.

Davison Chemical Markets Fertilizer Containing Molybdenum

BALTIMORE — Davison Chemical Co., Division of W. R. Grace & Co., now is marketing a commercial fertilizer which contains the trace element molybdenum. The product is Nurish, a water soluble 20-20-20 fertilizer.

Davison introduced Nurish about three years ago, but only recently incorporated molybdenum in the formulation. Originally developed for garden and small home use, the product now is used by truck farmers and orchard growers, the firm stated.

According to Climax Molybdenum Co., New York, more than 35 areas in scattered sections of the U.S. are now known to have molybdenum-deficient soils. At least a dozen crops are being treated commercially with molybdenum chemicals, generally applied as sprays or dusts or mixed by the user with fertilizer or other farm chemicals.

Nurish is packaged in 1 lb. and 5 lb. polyethylene bags and in 80 lb. polyethylene-lined paper bags. In use a solution of 3 lb. of Nurish per 100 gallons of water is sprayed on fruit or vegetables at recommended rates

GIANT SERVANT OF AGRICULTURE

Multiple loading docks at our Carlsbad plant speed cars on their way during this peak period.

Such fast handling of orders brings efficient, dependable service to PCA's many customers.

P.C.A. SALT of the EARTH RED MURIATE

POTASH COMPANY OF AMERICA
CARLSBAD, NEW MEXICO.

General Sales Office . . . 1625 Eye Street, N.W., Washington, D.C.
Midwestern Sales Office . . . First National Bank Bldg., Peoria, Ill.
Southern Sales Office . . . Candler Building, Atlanta, Ga.

INSECT AND PLANT DISEASE NOTES

Greater Dependence Placed On Pesticides in Virginia

BLACKSBURG, VA. — Statistical evidence that farmers in Virginia are placing more and more dependence on agricultural pesticides to control many crop insects, has been submitted by Dr. A. A. Muka, associate entomologist at Virginia Polytechnic Institute Experiment Station.

He says that a recent survey showed that 18,067 acres of forage crops were sprayed for alfalfa weevil control last year and 51,175 acres were treated for control of pea aphids, spittlebugs and potato leafhoppers.

The survey also revealed the presence of 2,300 boom sprayers on farms in the state; 213 boom sprayers available on a custom basis; 327 broadjet sprayers on farms and 21 broadjet sprayers available on a custom basis. A total of 2,871 low pressure sprayers was available for forage insect control in the state in 1955.

"This is all to the good," Dr. Muka says. "Once alfalfa weevils infest a field, they usually cause damage year after year. If alfalfa is to be grown in the infested areas, insecticides will have to be used to protect the growing crop."

The State Department of Agriculture statistician's report for 1955 shows 220,000 acres in alfalfa, 530,261 acres in clover and other legume forage crops.

The alfalfa weevil has been known in Virginia since 1952. It was first discovered in Utah in 1904, spread rapidly, and for 50 years has been a problem in 12 western states. Eastern growers felt secure, believing the insect from the dry West could not survive or prosper in the humid East. However, since the discovery of the alfalfa weevil in the East it has spread rapidly and is now causing damage in eight states. In Virginia, the insect is known to be in 64 counties.

Oklahoma Watching for Alfalfa Aphid Appearance

OKLAHOMA CITY—Alfalfa growers in Oklahoma are being alerted to the possibility of an infestation of spotted alfalfa aphid this year. Heavy infestations have been reported in the southeast, central and northwest counties of the state and the extended drouth has been favorable to an increase in the insect's population. Last season, the aphid damaged some fields of alfalfa in the state to the extent of 50% to 75%.

South Carolina Computes Control Material Costs

CLEMSON, S.C.—A recent computation of specialists of the Clemson Extension entomology and plant disease work indicates that the amount spent for chemicals used for the control of insects and crop pests in South Carolina in 1955, was $5,685,000. Cost of chemicals used for insecticides alone was estimated at $4,748,000 and for crop disease control, $791,000. Rodent control in the state cost $146,000, according to the report.

These amounts were smaller than those spent for similar control projects in 1954, it is pointed out. The extension entomologists state that this situation is probably a reflection of the light weevil population in the Piedmont and of unfavorable conditions during the late growing season. It also reflects the cold damage to the peach crop which eliminated this important use of pesticides.

"Since the appearance of organic hydrocarbon insecticides," the report says, "there has been an increase in the number of farmers who apply insecticides to control cotton insects. About 70% of the state cotton growers made an effort to control cotton insects in 1955. The average amount of dust applied per acre of cotton last season for insect control was only 30 lb. an acre. This is usually considered too little for maximum cotton production.

"Approximately 85% of the cotton acreage last season was planted with treated seed. Dusting and spraying by aircraft were widely practiced last season.

"For the first time tobacco last season unseated cotton as the leader in farm income in South Carolina. The control of tobacco pests accounted for a considerable portion of the insecticides, fungicides, and nematocides used and was partly responsible for the good yields.

"County agents estimate that 15,800 farmers used parathion for aphid control and 13,495 used DDT and 10,526 used TDE (D-D) to control tobacco budworm. About 55,000 acres of the state's tobacco acreage was dusted with either D-D or ethylene dibromide. Estimates of acreages on which insecticides were used for hornworm control range as follows: Dusted with TDE 52,000 acres; sprayed with TDE 75,000 acres; dusted with endrin 10,000 acres; and sprayed with endrin 13,000 acres.

"In addition, progress was made in the control of stored grain insects, in the seed treatment of small grains, in the control of soybean insects, in the treatment of pastures for control of armyworms and white grubs, in the control of pests of garden and truck crops, and in the control of livestock pests. Progress was also made in the control of household pests and rats and in the chemical control of weeds."

Early Season Insect Survey Made in Georgia

ATHENS, GA.—Recent insect surveys made in South Georgia revealed no insects nor damage on small grain or onions. However, moderate to heavy infestations of aphids were found on cabbage in Colquitt, Brooks and Lowndes counties. C. R. Jordan, extension entomologist and project leader, states that these pests can be controlled by the use of 1% parathion dust or 4%-5% malathion dust at 20 to 30 lb. an acre. Sprays may be used in the place of dusts. (Emphasis is made on the necessity for reading the label instructions as to timing and mixtures.)

These thoroughly tested insecticides control over 100

TOGETHER, these three powerful Shell insecticides effectively control most major pests that attack important crops. At the present time, continuing experiments and research promise even wider uses. Here are some of the major crop pests successfully controlled by aldrin, dieldrin, and endrin.

COTTON—Aldrin, dieldrin, endrin control such major cotton pests as boll weevil, thrips, cutworms, fleahoppers, plant bugs. Endrin controls *both* boll weevils and bollworms. With aldrin and dieldrin, simply add DDT for bollworms.

CORN—Aldrin in the soil controls rootworms, wireworms, white grubs, seed corn maggots and other subsurface pests . . . aldrin is also used extensively for soil insect control on many other crops.

PUBLIC HEALTH PESTS—Dieldrin stops mosquitoes, houseflies, fleas, ticks, chiggers, and others.

TOBACCO—Endrin controls hornworms, budworms, grasshoppers, flea beetles, and cabbage worms.

VEGETABLES—Dieldrin cont tuber flea beetle larvae, Colo potato beetles, sweet potato wee onion thrips, cabbage magg loopers and many other insects tacking vegetables.

FRUIT PESTS—Dieldrin cont plum curculio, lygus bugs, bugs.

NURSERY AND GARDEN PEST Dieldrin controls such well-kn garden destroyers as ants, w grubs, chinch bugs, earw gladiolus thrips, and others.

SEED TREATMENT—Dieldrin trols: true and false wirewo seed corn maggots, ants.

To help you achieve the most effective aldrin, dieldrin, and endrin formulations, Shell provides the finest in technical service . . . and field representatives who work with growers, county agents, and extension entomologists. Also, powerful advertising at the right time helps you make sales. Write for the very latest in technical information on these three outstanding insecticides.

SOUTHWESTERN ESA

(Continued from page 1)

FDA laboratory facilities are limited, and examinations must therefore be confined to samples collected by FDA men. "We cannot examine samples for others who would like assurance that their crops meet the legal requirements prior to shipment in interstate commerce. This is a job for commercial laboratories," he said.

Mr. Duggan reminded that FDA comes into the picture only when interstate shipments are made, but if a crop or an area is found to have high residues, the FDA will make every effort to get in touch with appropriate state authorities so that the residues may be reduced to meet the legal requirements before interstate shipments are made.

The speaker praised the job done by the chemical industry in its research programs and for providing not only good products to control pests, but also in providing accurate information on the use and limitations of each particular pesticide offered.

He added the thought, however, that no matter how much effort is put into preparing complete labels for the protection of users, this information must be heeded by the consumer before it is fully effective.

"It is extremely unlikely that excessive residues will be found on crops where label instructions have been read and followed carefully," he observed.

In closing, Mr. Duggan emphasized that all pesticides must be used according to strict label directions, on the crops specified, in the amounts specified and at the times specified. He urged representatives of the agricultural chemical industry to cooperate with FDA and the U.S. Department of Agriculture in continually reminding users to "read the label."

J. C. Gaines, head of the department of entomology, Texas A&M College, discussed the effect of insect damage on the quality as well as the yield of cotton. He reminded that in the past, the tendency has been to place more emphasis on the losses in yields than on the quality of the cotton.

"It is now recognized that the yield losses constitute only a part of the losses caused by insects," he said. "Since the cotton merchant buys on a quality basis, it is to the planter's advantage that he protect his crop from insect damage in order to produce highest quality cotton for marketing."

Dr. Gaines pointed out that damage occurring in the early stages of development of the cotton plant probably has no great effect on the quality of the product. But when damage is done after the bolls have developed, the quality of both the lint and the seed is affected.

"Insects such as aphids, spider mites and leafworms often defoliate the plants, causing the lint to be immature and weak," he said. "Boll weevils, bollworms, hemipterous bugs and pink bollworms attack the bolls and bring about serious injury to the lint and seed, thus reducing the quality and the market value."

In addition to partially defoliating the plant and causing premature opening of the bolls, cotton aphids may produce "honeydew," which contaminates the lint and interferes with spinning.

"This sugary substance furnishes an excellent media for the growth of a fungus which in turn stains the fiber," he said. "Where this condition exists, buyers refuse to pay the maximum price for the cotton."

In recent years spider mites have come to be recognized as pests of cotton which cause losses in yields as well as in quality, Dr. Gaines said. He added that infestations of mites in Louisiana have reduced cotton yields by as much as 45%. "In addition to this loss, there was a reduction in the weight, viability, and oil content of the seeds," he said.

A chain reaction follows defoliation by the leafworm which in turn causes premature opening of the bolls and makes possible green stains from the excrement of the larvae. This stain is particularly noticeable following showers. Buyers reduce the market price of cotton considerably because of this stain.

Also, yellow spots which have been observed in cotton, are now known to be associated with a fungus which in turn is associated with insects such as boll weevil, bollworm and pink bollworm, all of which make exit holes in the boll. Hemipterous insects also puncture the boll, producing an entry for fungus, Dr. Gaines said. Some species of hemipterous insects are known to stain the lint.

The pink bollworm, Dr. Gaines continued, not only reduces the quality of the lint, but reduces the seed turnout per bale, as well. "In south Texas in 1952, it was estimated by workers in the Entomology Research Branch that the loss in seed as a result of the pink bollworm was about 72 lb. seed per bale," he said.

Despite the fact that 1954 was a dry year and therefore one in which pink bollworm damage was at a minimum, a study made that year by the University of Texas revealed that cotton was reduced one grade and 1/32 of an inch in staple length, due to pink bollworm damage.

"The average difference between the value of the control cotton and blend of injured cotton was $15 a bale, while the average difference between the control cotton and the worst damaged cotton in each sample studied, was greater than $60 a bale," Dr. Gaines reported.

In describing slides shown on a screen, Dr. Gaines said that damage to quality was not severe in tests made, until the infestation reached at least 75% injured bolls with a minimum of 2 worms per boll. "It will also be noted that severe infestations of pink bollworm reduced the yield and quality as much as $113 an acre," he said. "The reduction in quality alone amounted to 8¢ a pound, or $42 an acre. It is believed that reductions in quality would be even greater in years in which the rainfall is normal or above."

That outstanding results have been obtained through systemic seed treatment techniques was reported in a paper authored by C. R. Parencia, J. W. Davis and C. B. Cowan, Jr., USDA, ARS, entomology research branch, Waco, Texas.

The paper reported progress to date for control of early-season cotton insects with American Cyanamid Co.'s product "Thimet," and two other products coded 12008 and 12009, also made by Cyanamid.

Tests were made against thrips, cotton aphid, a leaf miner, cotton

(Continued on page 8)

and approved Shell
100 major insect pests
aldrin
dieldrin
endrin
SHELL CHEMICAL CORPORATION
AGRICULTURAL CHEMICALS DIVISION
Atlanta • Houston • San Francisco • St. Louis • Jackson, Miss.
SHELL

Scenes From the Middle West Agronomist-Industry Meeting

AT MIDDLE WEST SOIL MEETING—College agronomists, U.S. Department of Agriculture personnel and representatives of the fertilizer industry converged on the Edgewater Beach Hotel, Chicago, Feb. 16-17, when the Middle West Soil Improvement Committee held its annual agronomist-industry meeting. The photos on this page, furnished through courtesy of MWSIC, picture a few of the 600 persons registered for the event. Across the top, left to right: Zenas H. Beers, MWSIC secretary, Chicago; Prof. P. J. Chapman, University of Wisconsin; Kasper Peter, Phillips Chemical Corp.; Dr. John R. Taylor, Jr., Grand River Chemical Division, Deere & Co., Tulsa, Okla.; Dean Gidney, U.S. Potash Co., New York; Bob Gibbs, Grand River Chemical Division; Dr. W. H. Pierre, Iowa State College, Ames; John L. Sanders, Mississippi River Chemical Co., St. Louis, Mo., and Dr. E. R. Duncan, Iowa State College. At right, first photo, H. R. Lathrope, Nitrogen Division, Allied Chemical & Dye Corp., Indianapolis; F. A. Houk, Federal Chemical Co.; W. A. Seay, University of Kentucky, and Ray White, Spencer Chemical Co., Kansas City, Mo. Second photo: Dr. George C. Smith, University of Missouri; Warren Huff, Duval Sulphur & Potash Co., Ashcraft-Wilkinson Co.; Wendell Hoover, Jr., Ashcraft-Wilkinson Co., and Dr. John Falloon, University of Missouri. Third photo: J. E. Bussart, John P. Eastwood, and Lloyd L. Stitt, all of Velsicol Chemical Corp. Fourth photo: Walter C. Hurlburt, U.S. Department of Agriculture; Dr. Kermit C. Berger, University of Wisconsin, and Dr. Malcolm H. McVickar, National Plant Food Institute, Washington, D.C. Bottom photo: Dale Friday, Nitrogen Division, Allied Chemical & Dye Corp.; W. B. Copeland, Smith-Douglass Co., and H. L. Garrard, American Potash Institute. For a story of the meeting see page 1 of the Feb. 27 issue of Croplife.

Sales Program "PLAYIN' POSSUM"?

Awaken it with PRIVATE LABELS!

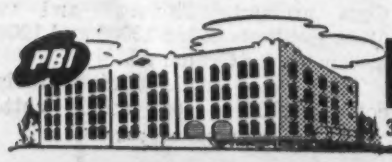
If your sales program sometimes "lays down and plays dead" then it's high time you discover the magic of packing *your* products under *your* private labels for distribution in *your* market.

If you're tired of pushing the same old lines (but at varying prices) as every competitor in your territory . . . if you're tired of seeing repeat orders lost to competition then you owe it to yourself to investigate private labels today!

Through private labeling *you* are assured an exclusive on *your* high quality line in *your* market . . . Your customers can't reorder from anyone but YOU!

Private Brands, Inc., *is ready with a complete service to help you "awaken sleeping sales" in your market! It will pay you to investigate today!*

Write, Wire, Phone for Particulars



PRIVATE BRANDS, INC.

300 S. THIRD - CL-3 - KANSAS CITY, KANSAS

ougher Selling Ahead This ear for Aerial Applicators, hio-Indiana Conference Hears

OLUMBUS, OHIO — The men fly fertilizers, insecticides and controlling chemicals over erican farms will have a tougher ing job in 1956; they should cut accident rate now running about er 10,000 hours of flying; new micals for controlling crop pests diseases are more potent than old, but also increase the hazard ilots and helpers.

hese were the keynotes of the h annual Ohio-Indiana agricultur- viation conference held Feb. 22- on the campus of Ohio State Uni- sity at Columbus.

Howard B. Taylor of the Ohio viation board reports 75 appli- tors and research and extension en registered for the discussions. nother 50 men engaged in flying ricultural chemicals showed up r the third day's discussions on w types of equipment at the niversity's aviation center, Don cott field.

armers will pull the purse strings nter in 1956, Riley Dougan, ex- sion economist of Ohio, predicted. ey will use ground equipment on d. The plane applicator will have show greater benefits, if he takes more cash this year," Mr. Dou- n said.

ccident rates among applicators ied little over the past four years, cording to Jay McCausland of Al- town, Pa., district Civil Aeronau- s Administration office. "Accidents l be fewer when we have better derstanding of aircraft perform- e and limitations and some fool- of reminder of these limitations," said.

here is more profit in operating und equipment than in plane op- tion, said Irvin Mount of Marion, . He uses both kinds. His cost ures showed slightly higher net urns per acre on his tractor- ayer equipment. The ground ipment averages about 40 acres the plane's 200 acres per day, wever.

n controlling legume insects, R. T. erly, Purdue entomologist, report- granular materials sifted to ound level gave better kill than low gallonage spraying by plane. Poisonous residues on edible crops ould cause the plane operator "lit- worry," said J. J. Davis of Pur- e University's entomology depart- t, provided the applicator reads istered labels and follows recom- ended practices. The Miller Amend- nt to the Food and Drug Act kes it more important to control sts early in the growing season d to never use persistent or other- se questionable materials late in e season, he said.

Planes are now flying about 500,- 0 hours annually to protect crops, G. Farleman of Standard Oil Co., eveland, commented in his talk on dling chemicals safely. First crop sting was in 1918 with materials t were a lot safer to handle, he d. Mr. Farleman listed these cau- ns with the newer pesticides: id contact with the skin. Use res- ators or gas masks and wear gog- . Keep the planes clean. Stay of dust, mist or spray filled at.

Lyle Goleman, Ohio extension en- mologist, gave the applicators ed descriptions of 24 crop pests plane dusting or spraying con- l. He included mosquitoes and gers in the list of pests for e treatment.

wo Ohio agronomists presented positive and negative sides of e applications. Dr. C. J. Willard ed against killing corn leaves to hasten drying of that crop for early picking. "We can do as much damage with desiccants on corn as we used to do with early cutting," Dr. Willard said. Corn that would make 75 bu. per acre puts enough dry matter into ears every 24 hours to raise the yield one bushel, Dr. Willard found at the critical maturing stage. "The best you could do by killing the corn leaves at this stage would be to shorten the time for picking by a day or two," he said.

John Parsons of the Ohio Agricultural Experiment Station saw a place for the plane in broadcasting nitrogen fertilizers on wheat before a spreader could get on the land in March or early April. On steep hilly farms, Mr. Parsons sees the plane as a safe spreader for lime and fertilizer.

Russell D. Sage, fruit grower of Burt, N.Y., killed mice in his orchard with poisoned cracked corn flown row by row about Sept. 15 and Nov. 1. He used 100 lb. of cracked corn, 2 lb. zinc phosphide, 1 to 2 qt. of soybean oil and ½ oz. of oil soluble methyl green dye. The dye discouraged birds from eating the poisoned corn.

PUBLICATIONS AVAILABLE

CLEMSON, S.C.—Revised editions of two publications giving information of interest to tobacco growers in South Carolina are now being distributed by the Clemson Extension Service. They are Circular 291, Tobacco Plant Production, and Information Card 82, Tobacco Insect Control Chart. Copies may be obtained from county agents or from the Clemson Publications Department.

Northwest Group Names Soil Improvement Committee Members

PORTLAND, ORE.—The board of directors of the Pacific Northwest Plant Food Assn. meeting in Yakima, Wash., recently approved new members of the Soil Improvement Committee.

Selected to represent industry were Frank Taylor, Oregon - Washington Fertilizer Co., Seattle, and Paul Willard, Meeker-Hughes Co., Salem, Ore. Also approved was Herbert Fletcher of the U.S. Department of Agriculture of Boise, Idaho.

Spring Meeting Set

SAN JOSE, CAL. — The spring meeting of the Western Agricultural Chemicals Assn. will be held May 15 at Hotel Clark in Los Angeles, C. O. Barnard, executive secretary, has announced.

DOUBLE VALUE
DOUBLE POWER

FOR YOU...
FOR FARMERS

Sul-Po-Mag®
Water-Soluble Double Sulfate of Potash-Magnesia
$K_2SO_4 \cdot 2MgSO_4$
22% K_2O - 18% MgO

SULFATE OF POTASH
for the profitable production of crops sensitive to chlorides

SULFATE OF MAGNESIUM
for high yields and quality on magnesium-deficient soils

DOUBLE POWER

DOUBLE VALUE

The need for sulfate of magnesium and sulfate of potash for the profitable production of a wide variety of crops in many farming areas is shown by research carried on by many agricultural colleges.

Consistent advertising in farm papers, and on radio and billboards is telling farmers that the most effective way to supply soluble magnesium and potash is to use a quality mixed fertilizer containing *Sul-Po-Mag*. We're building consumer acceptance for your premium grades—so cash in on the growing demand by asking your fertilizer manufacturer for grades containing *Sul-Po-Mag* for use on soils that are low in magnesium and potash. Look for the analysis on the bag . . . *N-P-K-Mg*.

International

POTASH DIVISION INTERNATIONAL MINERALS & CHEMICAL CORPORATION • GENERA

SOUTHWESTERN ESA

(Continued from page 5

fleahopper and the overwintered boll weevil, during the 1954 and 1955 seasons.

In the first season's tests, effective control of thrips was obtained for 3½ weeks after emergence, and some control was obtained for an additional week. Control of cotton aphid was obtained for 4½ weeks, the paper stated.

In 1955, most of the plots were planted under good germinating conditions and 1 lb. an acre dosages of Thimet and 12008 did not affect plant emergence, although heavy rain coming the day after planting reduced emergence in one planting.

Thrips control was obtained for five weeks after plant emergence, but at the end of six weeks, infestations approached that of the check plots. A single-pound dosage of Thimet gave better control than did a half-pound application, and compared favorably with an insecticidal treatment applied at weekly intervals through the early-season control period.

"When adult cotton fleahoppers were installed on caged plants in the single-pound per acre Thimet seed treatment, 17, 21 and 28 days after plant emergence, the mortalities were 80.6, 46.6 and 5%, respectively," the paper reported. "Field records indicated control was obtained four weeks after plant emergence."

The paper reported that when overwintered boll weevils were introduced on caged plants in the plot where one-pound-per-acre of Thimet had been used as a seed treatment, mortalities of the insects were 88, 63.2 and 33.2%, respectively, for 15, 21 and 28 days after plant emergence. No kill was obtained after 32 days, the authors said.

Field records showed the same trend and control were obtained four to five weeks after plant emergence under conditions of moderate populations. It was pointed out, however, that effectiveness did not persist long enough for control to be comparable to that obtained with a conventional early-season insecticidal treatment.

From the standpoints of appearance, growth and increased blooming, the treated plants excelled over the checks, it was pointed out. The seed-treated plants "compared favorably with a complete control insecticidal treatment except in instances when cotton fleahoppers or over-wintered boll weevils in injurious numbers were involved," the authors concluded.

That some resistance to lindane has been found in attempts to control infestations of screw-worm was reported in a paper presented by H. M. Brundrett, USDA, Kerrville, Texas. In reporting the results of a field survey on the performance of screw-worm larvacides, he described details of tests conducted to determine definitely whether or not the pest had developed resistance [to] Smear 335 under normal ranch [con]ditions.

Contributing to the resistance, [Mr.] Brundrett said, were the mild [win]ters experienced recently, which [al]lowed the over-winter survival [of] screw-worms that had been hit [by] the smear in quantities inadequate [to] kill. Thus, during the winters [of] 1953, 54 and 55, many of these worms over-wintered and passed on the resistance to the succeeding generation.

Normally, the speaker said, [the] screw-worm population in Texas is reduced each winter to survivors in a few counties along the Rio Grande or below. This interruption of successive broods breaks the chain of any resistance that might develop. The infestations of the following spring would be from non-resistant flies migrating from Mexico. Mr. Brundrett said that "this growth of tolerance will probably continue until another severe winter again reduces the population to scattered screw-worm flies along the Rio Grande."

In making the tests under ranch conditions, Smear 335 was applied to 157 cases of screw-worm infestation and close observations were made as to results. Larvae from treated wounds crawled for about 4 to 5 days, then died, or attempted to pupate. However, no flies emerged from any of the puparia developed from treated larvae, he reported. On the other hand, the checks, which developed maggots collected before treatment, pupated in 48 hours and from these pupae, flies emerged after 9 to 11 days.

In summary, Mr. Brundrett described EQ-335 as "a slow killer, but still very effective and one against which screw-worms have apparently developed some tolerance, but not survival resistance."

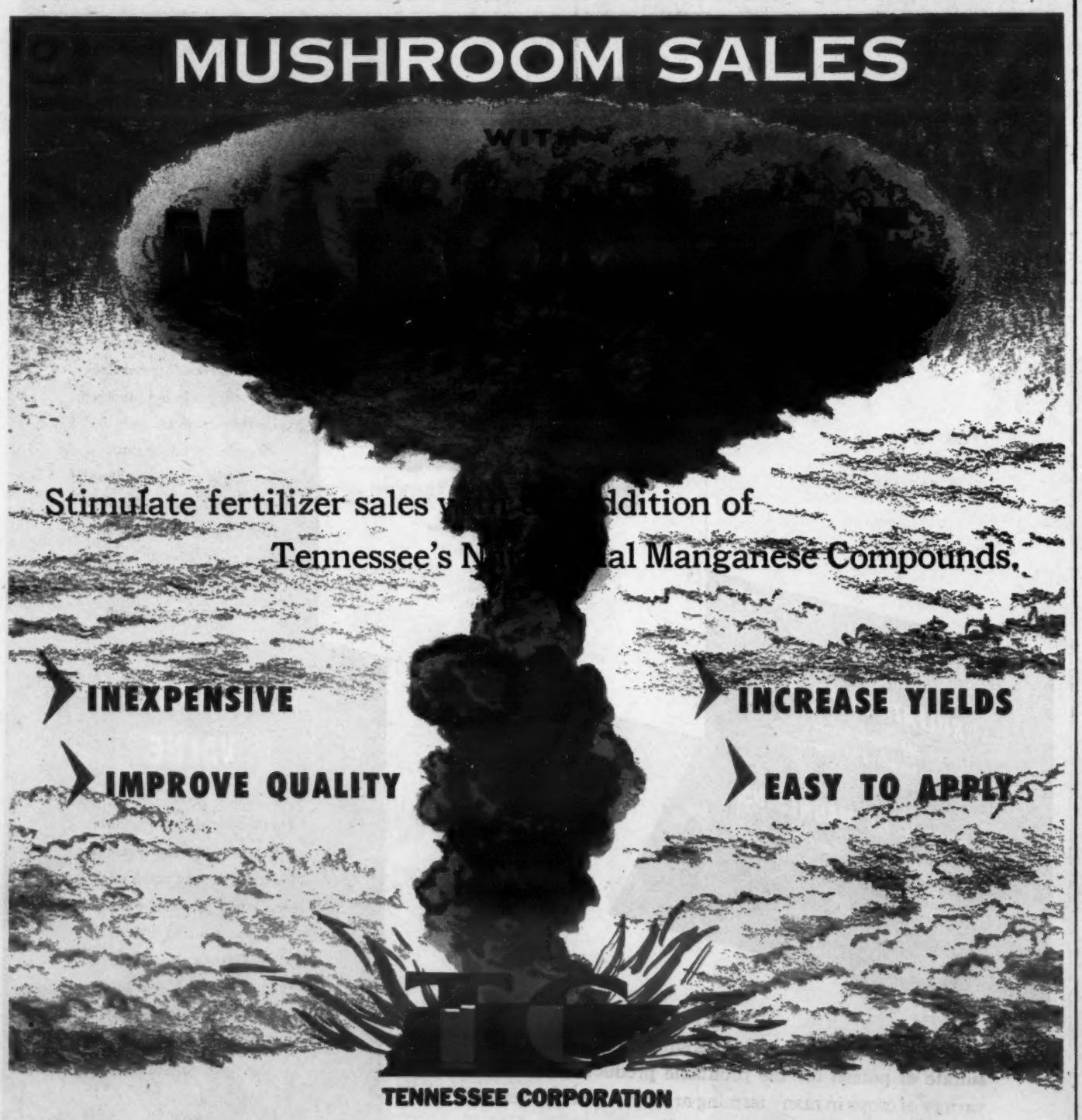
Dr. B. A. Porter, president of the Entomological Society of America, parent organization to the Southwestern Branch, greeted the group at the Feb. 20 session and reported on progress being made in the ESA toward streamlining its general activities, particularly in regard to publications.

The annual banquet was held Feb. 20 at the Texas Hotel, with [Ed] Durham, Fort Worth Star-Telegram farm editor, acting as master of ceremonies. Entertainment was provided by "Stammering Sam," a local actor who told the group all about his new invention, a spraying and dusting airplane that could fly "low and slow and would stall at 12 miles an hour."

The program committee comprised D. F. Martin, College Station, Texas; John Landrum, USDA, Waco, Texas, and Howard Teer, Pennsylvania Sugar Manufacturing Co., Bryan, Texas. Local arrangements were made by a committee headed by Hugh Swift, Pittsburgh Agricultural Chemical Co., Dallas; Clyde Bower, Oklahoma Board of Agriculture, Oklahoma City; M. D. Moore, E. I. du Pont de Nemours & Co., Inc., Fort Worth; Ralph L. Morris, John Powell & Co., Dallas; P. J. Reno, Hercules Powder Co., Dallas, and Byron Williams, Agricultural Specialties, Dallas.

Next year's meeting will be held at San Antonio, Texas, it was announced. Exact dates will be chosen later.

MUSHROOM SALES



Stimulate fertilizer sales with addition of Tennessee's Natural Manganese Compounds.

INEXPENSIVE

INCREASE YIELDS

IMPROVE QUALITY

EASY TO APPLY

TENNESSEE CORPORATION

FOR FERTILIZERS—FOLIAR APPLICATION—FEEDS

MANGANESE SULFATE
65% Mn SO_4. Designed specifically for inclusion in mixed fertilizer or direct application to the soil.

NU-M
Minimum 41% Manganese as metallic. A neutral, finely divided, water insoluble form of nutritional Manganese designed specifically for direct foliar application as a spray or dust or in combination with other foliar applied pesticides.

MANGANOUS OXIDE—TENNESSEE NU-MANESE
Minimum 48% Manganese as metallic. For fertilizer mixing, direct foliar application, direct soil application, and animal feeds.

SPRAY-DUST MIXTURES
Tennessee's Nu-Z, Nu-Iron, Nu-M and Tri-Basic Copper Sulfate are especially suited for use in preparing nutritional and fungicidal spray and dust mixtures and for use in mixed fertilizers.

FOR SAMPLES OR LITERATURE MAKE REQUEST ON YOUR FIRM'S LETTERHEAD.

TENNESSEE TC CORPORATION

617-629 Grant Building, Atlanta, Georgia

Neosho Fertilizer Reelects Officers

CHANUTE, KANSAS — Officers and directors of Neosho Fertilizer, Inc., were reelected at a meeting of stockholders recently. They are Sam Ton Propst, president; Dee D. Mitchell, first vice president; Weaver Black, second vice president; Robert Brown, secretary; James F. Cooper, treasurer; Harry E. Davis, assistant secretary and general manager, and James Cooper and Wilbur Thompson, directors.

Weed C… At West…

SACRAMENTO — […] roaches to the weed […] in both in the west […] down under" in New […] cussed at the joint m… Western and Californi… ferences here and on t… the University of Calif… eb. 15-17.

The report on New Z… es in the battle again… elivered in the openi… overnor's Hall on th… rounds at Sacramento… ns of Ivon Watkins… ymouth, New Zealand… Weed Problems and R… ethods in New Zeal… orted that the big… oblem seems to be … d other crops which… winter feed for shee…

California's governor… night, prevented by ill… nding the conference… ge through W. C. J… rnia director of a… hich he said:

"Our state departme… re advises me that… ch year losses attribu… d the cost of con… mounts to about $4 b…

"In California alone… weeds and the cost of… will run not less than… each year. California… progressive people; I … they are constantly … importance of weed… that they really are… thing about it."

The governor noted … nditions make weed c… und problem in Calif… ith this challenge, h… re not only weed co… the state level but … vel as well.

"Through the watchfu… ate and county offic… ection of new weeds … rly discovery and … ontrol measures," G… essage said. "In the … y program has turn… ajor weed species in… age of their infestat… g them before they … nd by attacking the… here they are, many … eeds have been stopp… ming widespread."

Dr. A. E. Carlson, m… ultural chemicals sal… ont de Nemours & Co… scussed the topic "Sub… erbicides."

"Some day, we may… rite a prescription … eed killers just as we… feed ration accordin… quirements, or plan … rogram on the basis o… said. "Tailor-made … signed to fit specific c… em possible as rese… tend their knowledge… of substituted urea …

"The Du Pont Co. … er $3 million in res… lop the substituted u… . This does not incl… estment.

"U.S. Department o… udies indicate that in … row crops, hand-we… d cultivating (which … weed control practi… 0% of the preharv… t go into crop prod…

"Some of the ones … high include cot… atoes, sugar bee… as. There is consi… ge to cut this k…

Weed Control Opportunities Stressed At Western, California Conferences

SACRAMENTO — Practical approaches to the weed control problem both in the western U.S. and "down under" in New Zealand were discussed at the joint meeting of the Western and California Weed Conferences here and on the campus of the University of California at Davis Feb. 15-17.

The report on New Zealand's progress in the battle against weeds was delivered in the opening sessions at Governor's Hall on the State Fair Grounds at Sacramento by Dan Watkins of Ivon Watkins, Ltd., New Plymouth, New Zealand. Speaking on "Weed Problems and Recent Control Methods in New Zealand," he reported that the biggest unsolved problem seems to be weeds of root and other crops which were grown as winter feed for sheep and cattle.

California's governor, Goodwin J. Knight, prevented by illness from attending the conference, sent a message through W. C. Jacobsen, California director of agriculture, in which he said:

"Our state department of agriculture advises me that in the U.S. each year losses attributable to weeds and the cost of controlling them amounts to about $4 billion.

"In California alone, losses from weeds and the cost of weed control will run not less than $200 million each year. California growers are progressive people; I am sure that they are constantly aware of the importance of weed control, and that they really are doing something about it."

The governor noted that climatic conditions make weed control a year-round problem in California. To cope with this challenge, he said, there are not only weed control experts at the state level but at the county level as well.

"Through the watchfulness of these state and county officials, the detection of new weeds is helpful to early discovery and application of control measures," Gov. Knight's message said. "In the past this survey program has turned up several major weed species in the incipient stage of their infestation. By finding them before they have spread, and by attacking them vigorously where they are, many of these new weeds have been stopped before becoming widespread."

Dr. A. E. Carlson, manager, agricultural chemicals sales, E. I. du Pont de Nemours & Co., Wilmington, discussed the topic "Substituted Urea Herbicides."

"Some day, we may be able to write a prescription for chemical weed killers just as we now balance a feed ration according to nutrient requirements, or plan a soil-building program on the basis of a soil test," he said. "Tailor-made weed killers, designed to fit specific conditions, now seem possible as research workers extend their knowledge of the family of substituted urea compounds.

"The Du Pont Co. has invested over $3 million in research to develop the substituted urea weed killers. This does not include any plant investment.

"U.S. Department of Agriculture studies indicate that in various western row crops, hand-weeding, hoeing and cultivating (which are essential weed control practices) take up 50% of the preharvest man-hours that go into crop production.

"Some of the ones where costs are high include cotton, onions, potatoes, sugar beets and dry beans. There is considerable challenge to cut this kind of labor investment — and chemical weed killers look like one good way to do it."

The preventive phase of weed control was described by Victor P. Osterli, extension agronomist at the University of California, Davis.

"Preventive weed control begins with the initial planning of a pasture layout," he said. "Proper land grading and provisions for drainage to handle the excess surface water are essential. This permits proper irrigation which will give the desired pasture plants the best opportunity for maximum growth and forage production. Poor land preparation on the other hand with water standing excessively long, encourages the troublesome weedy plants.

"Periodic mowing of pastures throughout the growing season is an effective and economical way of controlling weeds. Chemicals are another tool in pasture and weed control. They are most effective when properly used along with other known good management practices.

"Pastures are grazed too closely and continuously, and those with low soil fertility tend to become weedy more quickly. Properly fertilized pasture plants offer strong competition to likely troublesome weedy species," Mr. Osterli said.

Other speakers at the opening session included W. W. Allen, Dow Chemical Co., Midland, Mich., and Henry A. Wolf, weed specialist, Washington Agricultural Extension Service.

Mr. Allen, who is president of the National Agricultural Chemicals Assn., spoke on the Miller amendment regulating the spray residue of pesticides. Mr. Wolf told of the cost of weed control in the State of Washington.

W. A. Harvey, weed specialist of the University of California Agricultural Extension Service, saw the brushland of the state as its most valuable frontier as expanding cities encroach on agricultural lands.

Of California's 100,000,000 acres of land, 25,000,000 are barren desert acres, 25,000,000 acres are in forests, 27,000,000 in brushland, 10,000,000 in grassland, 10,000,000 in crops and 3,000,000 in built-up areas, Mr. Harvey said.

"The brushland," he said, "is our real frontier. While it is almost totally useless except for wildlife, it can be converted through vegetation control, to desirable grazing land."

Mr. Harvey explained that as cities encroach upon the farmland, the farmer moves into the grassland to plant crops, and it is mandatory to extend the dwindling grassland into the brushy areas.

Regarding the addition of brush-

PENCO® Agricultural Chemicals

In the Midwest--your Best Bet in '56

Effective Chemicals
Quality Control
Convenient Stocks
Dependable Supplier
Technical Assistance
Nation-wide Organization

Dealers in the Midwest and in the North, East, South and West are discovering the many real advantages in stocking PENCO Agricultural Chemicals. The wide variety of pesticides — wettable powders and emulsifiable concentrates — are quality controlled and field tested and are of proven effectiveness. They have a wide and ever growing customer acceptance. Our sales program and distributor and bulletin service assist in a larger volume of sales for PENCO distributors. Your best bet in '56 is PENCO Agricultural Chemicals — the profit line.

IN THE MIDWEST — *write or telephone for bulletins and other information to the PENNSALT Northern Division office, 309 Graham Building, Aurora, Ill. Phone: Aurora 6-8545*

PENNSYLVANIA SALT MANUFACTURING COMPANY OF WASHINGTON

Aurora, Ill. TACOMA, WASHINGTON Bryan, Texas

Portland, Ore. • Berkeley, Calif. • Los Angeles, Calif.
Montgomery, Ala. • Wenatchee, Wash. • Yakima, Wash.

Producing chemicals for farm, home and industry for over 105 years.

Pennsalt Chemicals

land to the productive capacity of a state, Oliver A. Leonard, associate botanist of the University of California at Davis, told of a new approach to the brush control problem.

"The most important place chemicals have in controlling woody plants," he said, "is probably in combination with other methods of control. The naive may think that this has been rather well investigated; however, when one sees the list of projects and proposed projects prepared by various personnel of the University of California involving only the 'ancient' methods of control, then one should realize how very little the field of chemical control has been studied.

"Some examples of the use of chemicals in combination with the old methods are as follows: 1. The use of chemicals for controlling live oak and other sprouts, following bulldozing and fire. 2. The use of chemicals by aircraft following the crushing and burning of mixed chaparral. 3. The use of chemicals following the chain sawing of trees. 4. Use of chemicals to kill trees and brush, followed by burning. 5. Use of chemicals on chamise, followed by burning. 6. Use of chemicals on 'mixed' coastal brush, followed by burning, seeding and respraying.

"Since chemicals represent a 'new' approach to the brush control problem, it is expected that numerous discoveries will be made—with the chemicals already available; in addition to this, the possibilities with chemicals yet to be discovered presents an interesting and challenging future to those of us who are interested in the control of woody plants."

Discussing the "Regulatory Phase of Weed Control in California" Robert M. Howie, Riverside County agricultural commissioner, stressed four points: plant quarantine inspection, survey detection and plant identification, noxious weed control and regulation and control of commercial weed control operators and weed control chemicals.

A. O. Jensen, American Cyanamid Co., said that the "ever-increasing floods of new chemicals" have brought about a change in the personnel of companies engaged in the agricultural chemicals business.

Speaking on "Agencies Involved in Weed Control in California—What Is Being Done and What It Costs," Mr. Jensen said that "The trend away from strictly sales personnel and towards more highly trained agricultural technicians is increasing in momentum yearly in industrial companies here in the West. Today over 75% of the men in research and sales of agricultural products are agricultural college graduates. The others are almost without exception men of long years of practical experience in the field of agriculture.

"Industry today is expending great sums of money on personnel and laboratories here in the West to attack and develop answers for the multiple weed problems found on every acre of agricultural ground.

"The industry is hard-put to obtain enough adequately trained men to staff research in the laboratory and in the field. The future for men technically inclined with an agricultural background would appear to be very good for many years."

Nearly all other papers presented at the conference dealt with control

Farmers get more profit from fewer acres with

PHILLIPS 66

AMMONIUM NITRATE

A companion high nitrogen fertilizer for your mixed goods!

Phillips *66* Ammonium Nitrate is the right nitrogen fertilizer to use with quality mixed fertilizer. When they use Phillips *66* Ammonium Nitrate, farmers realize lower unit production costs . . . more profit per acre! They make more money with less work, less worry—and from fewer acres.

Phillips *66* Ammonium Nitrate is *guaranteed* to contain 33.5% Nitrogen: 16.75% Nitrate Nitrogen, 16.75% Ammonia Nitrogen. The new multi-wall polyethylene-lined bags assure a free-flowing, easy-to-use product.

Phillips advertises its high quality, high nitrogen fertilizers all year 'round in a comprehensive list of leading farm magazines. And, of course, you can always depend on Phillips for prompt, efficient service.

Now available in New Polyethylene-Lined 80 and 100 lb. bags

It's Performance That Counts!

PHILLIPS CHEMICAL COMPANY

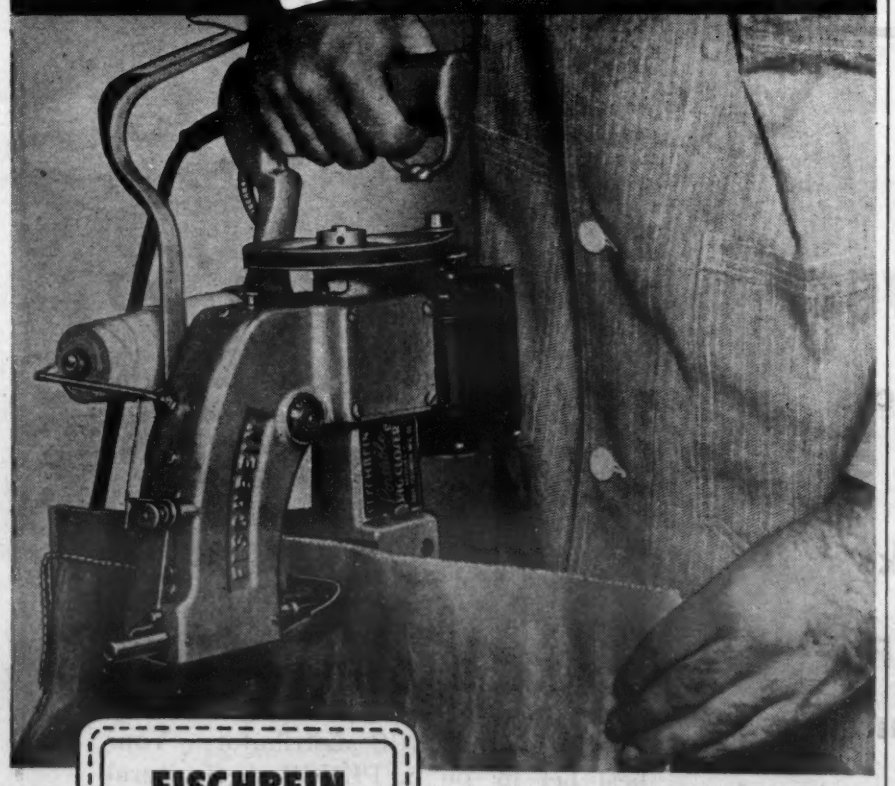
A Subsidiary of Phillips Petroleum Company

BARTLESVILLE, OKLAHOMA

OFFICES IN:

AMARILLO, TEX.—First Nat'l Bank Bldg.
ATLANTA, GA.—1428 West Peachtree Street
BARTLESVILLE, OKLA.—Adams Bldg.
CHICAGO, ILL.—7 South Dearborn St.
DENVER, COLO.—1375 Kearney Ave.
DES MOINES, IOWA—606 Hubbell Bldg.
HOUSTON, TEX.—1020 E. Holcombe Blvd.
INDIANAPOLIS, IND.—1112 N. Pennsylvania St.
KANSAS CITY, MO.—500 West 39th St.
MINNEAPOLIS, MINN.—212 Sixth St. South
NEW YORK, N. Y.—80 Broadway
OMAHA, NEB.—WOW Building
PASADENA, CALIF.—604 Citizens Bank Bldg.
RALEIGH, N. C.—804 St. Mary's Ave.
SALT LAKE CITY, UTAH—68 South Main
SPOKANE, WASH.—521 E. Sprague Ave.
ST. LOUIS, MO.—4251 Lindell Blvd.
TAMPA, FLA.—1214 South Dale Mabry
TULSA, OKLA.—1708 Utica Square
WICHITA, KAN.—501 KFH Building

FOR FAST, SECURE, LOW COST BAG CLOSING



FISCHBEIN *Portable* BAG CLOSER

- A *truly* portable bag closer . . . Weighs only 10½ pounds.
- Requires no installation . . . plug into any outlet.
- Handles textile and paper bags.
- Simple to operate and maintain.
- Lowest priced bag closer on the market.

FOR DETAILS, MAIL THIS COUPON NOW

DAVE FISCHBEIN CO. Dept. CL
2720 30th Avenue South
Minneapolis 6, Minnesota

Name..... Firm Name.....

Address.....

City..... State.....

OFFICERS EL

SACRAMENTO-
Washington State Colle
d president of the W
onference at the recen
g held here and at
f California Davis Ca
eeds Walter S. Ball,
artment of Agricultur
ere R. A. Fosse, res
urist, Denver, vice
William R. Furtick,
ollege, secretary-treas
James W. Koehler,
artment of Agricultu
esident of the Califor
erence, to succeed Pa
merican Chemical P
ose. Other officers of
roup are Vernon Ch
ity of California, Da
ent; Oliver A. Leona
f California, Davis,
. T. Vedder, Bakersfie

f specific weeds or wi
ndividual crops.
Harold S. Stanton, a
ineer, U.S. Cotton
Shafter, Cal., discusse
ation in cotton and di
or with flame cultivat
Also from the Shafte
I. Miller, associat
tated that in weed co
een a tendency to
standing sound cultur
ontrolling Johnson ar
rass in cotton. He spe
mended dry fallow for
hese pests.
Mr. Miller said th
many newer herbicide
ers considerable prom
rol of both Johnson
rasses. Two applicati
b. per acre of comm
e said, gave more e
than the same total ar
cide applied as a single
Cultural and chem
"whitetop" or hoary
cussed by James W. K
supervisor of rodent
trol, California Depar
culture.
Mr. Koehler said t
perennial can be cont
bining cultivation or
cropping with chemica
2,4-D. He added that
of 2,4-D sprays alone
ful unless two or th
can be made during t
son. Ninety to ninet
control can be achie
two or three consec
treatment by this met

**Weed problems i
world's largest irrig
were described by
superintendent of i
drainage for the In
tion District with
canals and drainage
ering 1,500 square m**

He said the annual
was nearly $500,000.
included a progress r
mental work with
dalapon, amizol and
of cattails and sedges
A. H. Williams, So
Cal., formerly in cha
Rice Experiment St
Cal., reported on rece
in the control of we
stressed cultural met
the use of chemicals
growers about safegu
2,4-D and similar hor
for weed control, to
to nearby sensitive c
The most serious
in California from th
distribution and acre
the morning glory, M
field supervisor of we
fornia Department
told the conference
present control meth
benefit the farmer, bu
cation of this pest is
cult and the eliminati
infestations is a rarit

OFFICERS ELECTED

SACRAMENTO—Henry Wolf, Washington State College, was elected president of the Western Weed Conference at the recent annual meeting held here and at the University of California Davis Campus. He succeeds Walter S. Ball, California Department of Agriculture. Also named were R. A. Fosse, research agriculturist, Denver, vice president, and William R. Furtick, Oregon State College, secretary-treasurer.

James W. Koehler, California Department of Agriculture, was elected president of the California Weed Conference, to succeed Paul F. Dresher, American Chemical Paint Co., San Jose. Other officers of the California group are Vernon Cheadle, University of California, Davis, vice president; Oliver A. Leonard, University of California, Davis, secretary, and J. T. Vedder, Bakersfield, treasurer.

of specific weeds or with problems of individual crops.

Harold S. Stanton, agricultural engineer, U.S. Cotton Field Station, Shafter, Cal., discussed flame cultivation in cotton and displayed a tractor with flame cultivator attached.

Also from the Shafter station, John H. Miller, associate agronomist, stated that in weed control there has been a tendency to overlook long-standing sound cultural practices in controlling Johnson and Bermuda grass in cotton. He specifically recommended dry fallow for the control of these pests.

Mr. Miller said that among the many newer herbicides, dalapon offers considerable promise for the control of both Johnson and Bermuda grasses. Two applications of 20 to 25 lb. per acre of commercial dalapon, he said, gave more effective control than the same total amount of herbicide applied as a single treatment.

Cultural and chemical control of "whitetop" or hoary cress, was discussed by James W. Koehler, district supervisor of rodent and weed control, California Department of Agriculture.

Mr. Koehler said this deep-rooted perennial can be controlled by combining cultivation or cultivation and cropping with chemical treatments of 2,4-D. He added that "the application of 2,4-D sprays alone is not successful unless two or three treatments can be made during the growing season. Ninety to ninety five per cent control can be achieved only after two or three consecutive years of treatment by this method."

Weed problems in one of the world's largest irrigation districts were described by O. L. Fudge, superintendent of irrigation and drainage for the Imperial Irrigation District with 3,100 miles of canals and drainage channels, covering 1,500 square miles.

He said the annual cost of control was nearly $500,000. His discussion included a progress report on experimental work with combinations of dalapon, amizol and TCA for control of cattails and sedges.

A. H. Williams, South Dos Palos, Cal., formerly in charge of the U.S. Rice Experiment Station at Biggs, Cal., reported on recent developments in the control of weeds in rice. He stressed cultural methods as well as the use of chemicals and cautioned growers about safeguards when using 2,4-D and similar hormone herbicides for weed control, to prevent injury to nearby sensitive crops.

The most serious perennial weed in California from the standpoint of distribution and acreage infested, is the morning glory, Murray R. Pryor, field supervisor of weed control, California Department of Agriculture, told the conference. He said that present control methods can and do benefit the farmer, but that the eradication of this pest is extremely difficult and the elimination of established infestations is a rarity.

This pest also was the subject of a paper by E. E. Stevenson, Modesto, Cal., farm adviser. He said that the shielded spray method of applying 2,4-D to control morning glory in beans and other row crops continues to give satisfactory weed control with a minimum of damage to the crop being treated and nearly none to nearby crops.

Problems of weed control in sugar beets and the effect of weeds on the sugar beet industry were discussed respectively by Ralph Heath, research agriculturalist for the Holly Sugar Co., and Austin Armer of the Spreckels Sugar Co.

"The two major problems which confront Sacramento Delta farmers as they attempt economic control of weeds in alfalfa grown for hay are limited effectiveness of present methods and their cost," Dr. Ogden C. Riddle, consulting agronomist of Davis, said.

"Needed improvements include the development of a more effective production management system in which new herbicidal materials take their place as effectuating tools.

"To fit grower needs, such materials should be highly versatile in range of species and size of weeds that can be dependably controlled by plane application at a total cost to the grower of less than $5.00 per acre," he said. "The potential market of such materials is tremendous."

An appraisal of the costly weed problem in cotton was given by Chester L. Foy, assistant specialist in botany, University of California, Davis. In a panel discussion of weed problems in row crops, Mr. Foy named Johnson grass and watergrass as the most troublesome species associated with California cotton.

W. C. Hageman of Yolo, Cal., research agriculturalist for the California Packing Corp., said that herbicides have reduced the cost of weed control in asparagus nurseries by $50 per acre and have resulted in better plants for transplanting.

Milton D. Miller, specialist in agronomy, University of California at Davis, formerly county director and farm adviser of the Glenn County Agricultural Extension Service, reported on the "Glenn County Extension Weed Program." He said that "In our opinion, our most effective way of implementing a new method of weed control is via field tests and demonstrations in the field on a few of the key farms of the county."

"Russian Knapweed Control" was discussed by Graham Randall, district supervisor of rodent and weed control, California Department of Agriculture. He said that investigations over the past four years indicate the use of 2,4-D as a late fall and early spring applications to the rosette stage of growth may prove to be the most effective means of control. Other tests, he said, are being made using 2,4-D as a temporary soil sterilant.

Exhibits and demonstrations of agricultural aircraft and ground equipment, followed by discussions of

It Takes TWO to Fight Grain Infestation and Douglas Has Both

1. Douglas HAS THE KNOW-HOW

Grain sanitation problems? Solving them is part of the stock and trade of Douglas. Whether you need experience and know-how for your own problems of grain sanitation or for those of your farmer customers, you can rely on Douglas to help you with those problems. More than 40 years of experience has made Douglas the most responsible and qualified source for the solution of your grain sanitation problems.

WHEREVER THERE IS A GRAIN SANITATION PROBLEM THERE IS A NEED **FOR DOUGLAS!**

Douglas CHEMICAL COMPANY

2. Douglas HAS THE PRODUCTS

In addition to broad experience in the field of grain sanitation, Douglas offers you a complete line of proven grain sanitation products. Whether you are in the grain storage business or resell our products to others who are, you can always depend on these Douglas products!

DOUGLAS TETRAKOTE®

. . . the liquid grain protectant that stops insect infestation before it starts.

DOUGLAS TETRAFUME®

. . . the grain fumigant that gives you 4-way protection and grain conditioning.

DOUGLAS TETRAKIL®

. . . for effective on-the-farm grain fumigation and for commercial flat storage.

DOUGLAS SPECIAL MILL SPRAY

. . . the surface and space spray that protects the surface of stored grain from insect attack.

DOUGLAS FARM BIN SPRAY

. . . the active residual spray for you and your customers to use to rid empty bins of insect infestation.

FREE Brochure

Send for copy of new brochure that tells complete story of Douglas TETRAKOTE and how it is effectively combating the problem of grain sanitation. Mail coupon today.

DOUGLAS CHEMICAL CO.
620 East 16th Avenue, North Kansas City, Missouri

- ☐ Send literature on following Douglas products:
- ☐ Send free copy of TETRAKOTE Brochure.
- ☐ Send movie reservation information.
- ☐ Have a Douglas representative call on me.

NAME_____

COMPANY_____

ADDRESS_____

TOWN_____ STATE_____

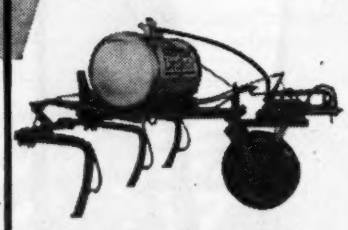
For Every Type Crop or Soil...
Any Size Tractor or Farm...

DEMPSTER
LiquiJector
Liquid Fertilizer Applicators

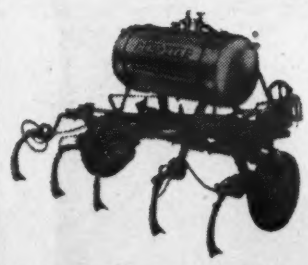
New Dempster 3-point hitch hydraulic lift Liquijector, equipped with super-accurate, easy to use Dempster Liquijector pump. Will permit use of large variety of 3-point hitch tools in combination with application.

Do a Better Job at Any Season!

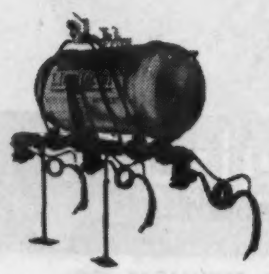
If you're still wondering whether the proven benefits of Anhydrous Ammonia or high-nitrogen solutions are practical, economical and profitable on your farm—you should know more about Dempster Liquijectors.* Highest in accuracy and efficiency of application, the complete Dempster Liquijector line of applicators is designed to meet any farm conditions—type of soil, acreage, row crop, field crop or pastures . . . large or light tractor power . . . NH_3 or solutions. Moreover, with most Liquijector models you can combine the application with your other operations—plowing, tilling, planting or cultivating . . . saving time, man power and tractor power.



Semi-Mounted Liquijector, with Dempster Liquijector pump or flow control valve—perfectly balanced, highly maneuverable, accurate and economical. Plow, plant, till as you fertilize.



Dempster 107-1 Liquijector, mounted on famous Dempster 100 Tool Carrier—use Liquijector pump or flow control valve system; mechanical power or hydraulic lift.



Quickly mounted Dempster D-100 and D-60 Liquijectors, with flow control valve, for smaller acreage and low cost.

*Write for the new Dempster Liquijector Book—complete details and illustrations.

Dempster Liquijectors Type S for Solutions available with capacities to 300 gallons.

DEMPSTER MILL MFG. CO.
Beatrice, Nebraska

equipment used in weed control highlighted the final day of the conference on the Davis campus.

In a paper prepared for the conference, J. Pelej, sales manager, Spraying Systems Co., Bellwood Ill., discussed "Agricultural Spray Nozzle Design, Research, and Manufacturing."

"The research program covering spray nozzles must be continuous, and extensive in its scope because of the increased need for spray nozzles which will meet exact specifications," he said. "The designer must contend with various factors that offset spray characteristics—such as specific gravity, viscosity, surface tension and temperature. He must have at his command sufficient equipment for measuring capacity, spray distribution, particle size, impact and wear.

"The modern spray nozzle is in reality a precision instrument. It can be made available at a relatively low price only through careful design, the use of the latest automatic machinery, and a workable production testing program."

Norman B. Akesson, agricultural engineer at the University of California, had charge of the program. He and Wesley E. Yates, also of the university's agricultural engineering department, presented a report on important recent research findings relative to agricultural aircraft.

"The Agricultural Aircraft Assn. of California has indicated that during the past year it has enjoyed its most optimistic and prosperous season since its organization," the report said.

"It can probably also be said that the past year has seen the agricultural aviation of the entire U.S. reach a new stage of maturity based on a more secure footing of cooperation and understanding between the operators, farmers, regulation agencies and agricultural aviation research groups."

Oregon Dealers Plan March Meeting

PORTLAND, ORE. — Hundreds of fertilizer, feed and seed merchants and allied industry representatives are looking forward to the 25th annual Oregon Feed and Seed Dealers' Assn. convention March 15-16 at the Multnomah Hotel here.

Feature of the affair will be the honoring of the organization's past 15 past presidents. All of them with the exception of H. G. Elliott, Perrydale, Ore., the association's second president, will be in attendance.

The group's first president, William Theda, secretary of the Pacific Northwest Millers' Assn., Tacoma, Wash., served from 1930 to 1932.

Principal speaker will be Erwin L. Peterson, assistant secretary of agriculture, and formerly Oregon state director of agriculture for 10 years.

Harold Davis is convention chairman, John Alexander, Portland, is program chairman and Alec Runciman of Portland's Webfoot Fertilizer Co., is housing chairman.

Government Lists Available Patents

WASHINGTON — More than 900 government-owned patents available for private use on a royalty-free basis are described in the Patent Abstract Series Supplement just published by the Office of Technical Services, U.S. Department of Commerce.

Publication of this supplement brings up to date the original seven volumes in the Patent Abstract Series published and distributed by OTS during the past 18 months. It lists all patents acquired by the government during the period January 1954 through June 1955.

The Patent Abstract Series Supplement can be obtained for $3.75 a copy from the U.S. Department of Commerce and through its field offices.

Winner Announced In South Carolina State Corn Contest

CLEMSON, S.C.—First-place winner in the 1955 South Carolina State Corn Contest is C. W. Josey, Lee County. His yield was 192.4 bu. of corn produced on one acre. Second place winner is J. H. Bolding, Pickens County, whose yield was 178.2 bu.

Winners were announced and prizes were awarded at a recent luncheon given in honor of the 166 corn growers of the state who each produced 100 bu. or more of corn on one acre in 1955.

The 1955 contest was sponsored by the South Carolina Plant Food Educational Society and was conducted by the Clemson Extension Service.

The annual South Carolina State Corn Contest was started in 1949 by a committee representing the fertilizer industry of the state in cooperation with the Clemson Extension Agronomy Division. Since that time the contest has been one of the annual major educational projects of the society. The contest was the outgrowth of the South Carolina 100-Bu. Corn Club, which was started in 1948.

Hugh A. Woodle, leader, Clemson Agronomy Extension Work, in a talk at the luncheon, stated that the 100-Bu. Corn Club and the State Corn Contest have stimulated farmers to change to better corn production practices. He pointed out that the state average per acre yield of corn for the 20-year period prior to 1949 was 14.5 bu.

Since the start of the contest, the average yield has increased to 21.8 bu. per acre, and the average state yield for 1955 was 28 bu. Mr. Woodle attributed this increase to the widespread adoption of the South Carolina 5-point corn program. The five points in this program are: Thorough soil preparation, recommended certified hybrids, liberal fertilization, 12,000 to 15,000 plants per acre and early shallow cultivation.

Announcement was made that the Plant Food Educational Society will sponsor the corn contest again in 1956, but that the awards will be based on 3-acre yields rather than for one acre as in past years.

Scientist on Search For Insect Parasites

BERKELEY, CAL. — A University of California scientist will be in Mexico until the middle of April, searching for tiny wasps that attack insect pests on citrus trees.

Dr. Paul DeBach, associate entomologist on the Riverside campus, will comb the high Mexican plateaus in a quest to locate a citrus pest parasite hardy enough to withstand extreme temperatures in interior California fruit-producing areas.

(Although citrus is not grown commercially on the plateaus, parasites which attack scale pests on oleander bushes have been found there.)

On a previous south-of-the-border expedition, Dr. DeBach found several species of beneficial citrus pest parasites, one an enemy of the red scale, but these wasps cound not endure California citrus belt temperature.

If he finds a hardier wasp this time, the species will be bred with other strains in quarantine rooms at the Riverside campus in an attempt to insure endurance here.

While in Mexico, the scientist will collect specimens of a black scale parasite that is known to attack all stages of the citrus pest. He will also watch for enemies of the spotted alfalfa aphid.

ADDRESSES AD CLUB

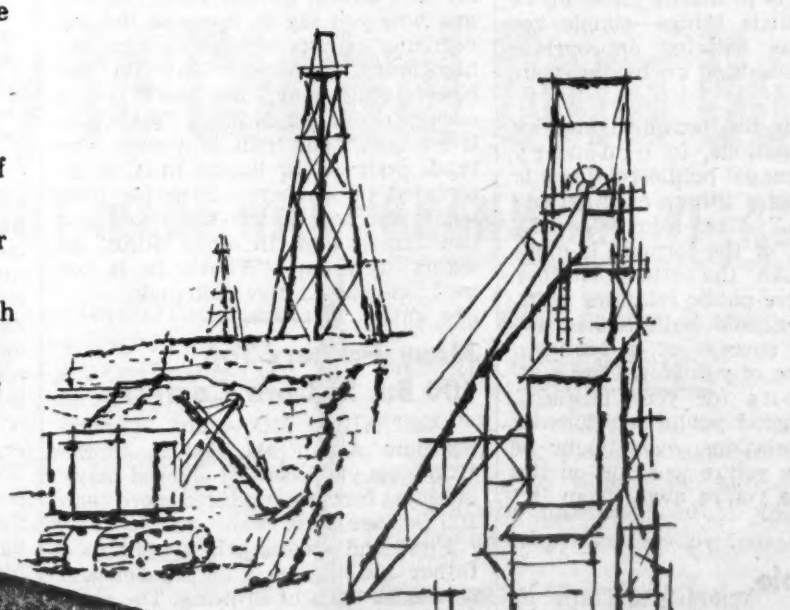
KANSAS CITY—John D. Waugh, director of advertising, Allied Chemical & Dye Corp., Nitrogen Division, New York, addressed the Kansas City Advertising & Sales Executives Club Feb. 20 on the subject of commercial public relations.

N P

a joint venture in Potash

A new, substantial and dependable source of potash for fertilizer manufacturers is being developed by National Potash Company in New Mexico.

National Potash is a joint undertaking of Pittsburgh Consolidation Coal Company and Freeport Sulphur Company. The former is one of the nation's major coal firms, the latter a leading producer of sulphur with additional interests in oil and other minerals. The skills which they bring to the mining, refining and marketing of potash assure top quality, uniformity and service.



NATIONAL
POTASH COMPANY
205 EAST 42nd ST. • NEW YORK 17, N.Y.

Special Retail Section

Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Treat each customer as though he has a sign around his neck and on the sign are printed three letters—V. I. P.—very important person. See if this doesn't make some difference in your attitude.

This was the suggestion made by a speaker at the recent Oklahoma Pest Control Conference held on the Oklahoma A&M College campus at Stillwater.

Although the conference was devoted mainly to reports of developments in pest control chemicals, research and application methods, the operators in attendance were filled in also on how to deal with people.

Mrs. Phyllis Edmonds, vice president of Home Federal Savings & Loan Assn., Tulsa, told the pest control people that a plan for getting public understanding and acceptance of a product is primarily made up of a thousand little things—simple actions such as wearing appropriate clothes while selling or having your hair combed.

"Despite all the technical and involved explanations, in ordinary 'people's language' public relations is doing the right thing—and getting credit for it," Mrs. Edmonds said. "Neither half of the formula is more important than the other. Neither half is effective public relations without the other, and both halves are vital to the success of a business. And every one of you is making public relations for your business, whether it's good public relations or bad public relations, every hour of the day while you're working on the job and while you're away from it."

Dealing With People

"First in importance in a good public relations job is the ability to deal successfully with people," according to Mrs. Edmonds. "Some few folks seem to be born knowing how to get along with people, but it's a skill that can be learned by anyone who's willing to try. There are volumes on the subject in the bookstores and in the libraries, and you'll find practically all of those books on getting along with people pretty much agree on one basic formula. And that formula follows the conclusion of Prof. John Dewey, the famous psychologist, who said, 'The deepest urge in human nature is the desire to be important.' A man's feeling of importance is necessary for his peace of mind, his contentment, his joy of living. When you understand this fundamental longing in all people to be appreciated and recognized you have the key to success in dealing with people. Then all you have to do is use it.

"If you will constantly keep the very important person sign in mind in dealing with all people, you cannot fail to treat them courteously, and kindly, and with consideration. And the 'good will' will come back to you like the proverbial bread upon the waters."

The same basic formula that is the foundation for good human relations is also the foundation for effective advertising, stated Mrs. Edmonds. It is the recognition of the self-interest of people, the "desire to be important," the V.I.P. Whether you advertise in the newspapers, on radio or television, road signs and billboards, through direct-mail, with gadgets and give-aways or whatever means, this formula should govern what you say and how you say it. Some of the advertising experts who make with the high-sounding phrases call it "the benefit philosophy," but you'll find it easier to remember it as, "What's in it for me?" The man or woman who reads your ad, or listens to it, is interested in what you have for him, what you can do for him, how you can benefit him. In other words, he wants to know, "What's in it for me?" concluded Mrs. Edmonds.

Many Farmers Top 100 Bu. in Corn Contest

COLUMBIA, MO.—The Missouri Farmers Assn. said results of the 1955 corn yield contest showed many Missouri farmers produced more than 100 bu. per acre.

First and second prizes went to a father and his son, J. N. Mundell and Junius Mundell of Browing. The elder Mr. Mundell grew 185.90 bu. per acre and his son, 171.74.

Of 247 competitors, 146 had yields of 100 bu. or more per acre.

Linn County, with 12 entries, had the highest average of the county crops, with 123 bu. per acre.

BRIEFING—New officers of the Oklahoma Pest Control Assn. are shown above being briefed on new equipment during the recent annual meeting of the association at Oklahoma A&M College in Stillwater. From left to right are W. J. Pinkston, Capital Termite Co., Oklahoma City, president, A. M. McIntosh, McIntosh Termit Control Co., Tulsa, vice president, and G. A. Bieberdorf, Oklahoma A&M entomologist. Not shown is the new secretary-treasurer, Tom Graham, Graham Exterminators, Oklahoma City.

KANSAS FIRM FINDS

Convenience and Courtesy Are Inexpensive Sales Tools

Convenience and courtesy should be stressed in the sales and service program of every farm supply dealer.

It costs little or nothing to be courteous to customers. It also costs little to furnish conveniences that will bring the customer back again.

Here's how a firm in northeast Kansas builds and holds business by emphasizing these two well-proven factors.

It hired an older man who had a friendly personality and who knew many farmers in the area. In fact, this man had been a farmer himself for many years. When a customer comes in the office, the friendly clerk greets the customer by his first name and joshes with him a while.

When the talk turns to fertilizer, the customer is shown the small samples of various fertilizers on display in neat pans or boxes on a table placed in the office for this purpose. Each sample has the price and name of the fertilizer on a small card stuck in the fertilizer.

In a rack nearby are various pamphlets describing a particular fertilizer, and when the customer asks questions about the product, the clerk can readily select a pamphlet and show the customer what he wants to know. A customer who is in a hurry appreciates it when one can answer his questions quickly and authoritatively. In many cases this fact alone hastens a sale.

After the customer has placed his order, the machinery of customer convenience is further set in motion. Fertilizers here are stored about a block away from the office, and each place of storage is numbered. In other words, if the customer wants 16-20-0 then he is told to drive to warehouse No. 1, or No. 2, as the case might be.

Before the customer reaches the warehouse, workers at the grain elevator are alerted by an inter-com system to watch for the customer and wait on him promptly. Sometimes, in order to cinch the quick convenience for a customer, the boss will tell the friendly clerk to "ride along with Joe and see that he arrives at the right warehouse. And while you are there check the number of bags the boys load on the truck so Joe won't be shorted."

This extra courtesy always brings a pleased smile to the face of the customer.

Not all farmers are men. In many cases women drive trucks to town and order fertilizer. This firm was quick to meet this problem. When a lady customer comes for fertilizer, the boss tells the lady to "sit down on this chair in the office and I will have one of the men drive your truck over to the warehouse and load the fertilizer. Here is this morning's paper if you wish to read."

Sometimes she does not want to stay in the office but would rather "go up town and do some shopping." In either case, the convenience for this kind of customer pays off handsomely, not only in sales but also in lasting friendship which insures future sales.

This firm has a full basement under the office which has been remodeled into a modern "living room." In summer, during the heat, or in winter when it is cold, the boss sees to it that lady customers, often with their children, who have to wait until a truck is loaded, are shown to this room for comfort and well being. Soft drinks are on hand for them if they wish. Papers, magazines, and a radio are also there for their convenience.

High Fertilization Rates Pay, Says Missouri Agronomist

COLUMBIA, MO. — It pays to add enough fertilizer for high crop yields whether farm prices go up or down, according to Frank Miller, University of Missouri agricultural economist. Mr. Miller came to this conclusion after summarizing a number of farm tests involving fertilizer use.

High, medium and low rates of fertilization were used in the tests. In times when corn, wheat, soybeans, and hay prices are high, net returns per acre from these crops can average as much as $126 when large amounts of fertilizer are used according to soil test.

But, when only small amounts of fertilizer are used, net returns may average only $26 an acre.

When prices of these four major crops are near the long-time average, fertilization according to soil tests can bring a net of $56 per acre. This compares with a loss of $8.20 from the low rate of fertilization, Mr. Miller's figures show.

In periods when prices were below the expected long-time average, the high rate of fertilization returned a net gain of $2.65 an acre. Although this figure is low, it still is very favorable when compared to a $33 loss an acre when fertilizer use was reduced.

Little Things in Merchandising Add Up—On the Cash Register

Editor's Note

The following article is the third and final one of a series prepared for Croplife by Frank Goodwin, professor of marketing, college of business administration, University of Florida, Gainesville, on various aspects of selling. It deals with retail advertising, goodwill and salesmen. Previous articles, discussing buying by the retailer, store layout and displays, appeared in the Feb. 20 and Feb. 27 issues of Croplife.

v v

Let us assume that the retailer has planned correctly and has a stock of merchandise which his customers need and want. The store is laid out so that it can handle maximum traffic and customers can see most all the merchandise on display with no trouble. The goods are displayed in an attractive manner. Every opportunity for impulse buying is available.

All the retailer needs now is customers for his store. Actually, the retailer should go after his customers if he wants them. Some merchants just wait for them to come. Often that's a long wait.

Progressive merchants invite the customers to come. They advertise. If you want guests in your home, you invite them. If you want customers in your store, you must invite them too.

Good advertising has personality. Does yours? Look at some of your recent advertisements. Cover up, in those advertisements, the name of your store. How could you recognize your own advertisements if they were mixed up with other stores' advertisements? If you can't, you had better begin to think of ways to make your advertisements have some personality of their own so they can be recognized at once by your readers as yours.

Advertisements compete with news for the interest of the reader. They will lose the competition unless they are newsworthy. They must be timely and fresh. They must tell about products and services that are interesting right now to the reader. Do you plan your advertising efforts to tell your story at the season when it has the maximum appeal to the most readers, or do you just kind of advertise from time to time on impulse? It's so easy to plan an annual advertising budget, and it's so profitable too.

Are you advertising items on which you make the maximum margin? Are you advertising items which will create the maximum store traffic for you? Are you advertising items that you want to clear out before the season is over and you suffer a big loss by having to carry them over to another season? Why are you advertising the items you are advertising?

There are a lot of good reasons for advertising various items. But be sure you know why you are advertising the items you are advertising. Know what you want your advertising to achieve for you. When you know what job you want your advertising to do, you can look and see if it's doing that job for you. If you don't know what you are trying to achieve through an advertisement, or a series of advertisements, you have no basis for evaluating your advertising effort.

The retailer should depend on his window displays to help get customers into his store. Attractive, timely, and well-planned window displays do bring customers off the street into the store. Poor, tired, unattractive window displays do not bring customers into the store.

A window display that a passerby has seen before is exactly as interesting to him as a last week's newspaper. If you want to get the feel as to just how valuable tired, old window displays really are, just try to sell folks a few of last week's newspapers and you will have your answer. If you want your window to work for you, keep it fresh; keep it newsworthy; use imagination.

Having good window displays that can stop traffic and bring folks into your store takes planning. It may cost a little money and it will cost a lot of effort. But it will pay big dividends.

All modern retailers are trying to be good neighbors. It is true that you have to have customers, but, too, you have to have friends who are likely to become customers. This is goodwill, and it costs money and effort. In addition to other expenses, we have all that money spent for goodwill purposes.

What is all that money that has been spent worth? How much are all of these dollars spent for advertising and goodwill worth? Interior display costs — how much is that money worth? We have a real problem to answer those questions, because we have arrived at the very heart of the retail selling situation. Whether all of those spent dollars are worth a nickle on a dollar, or a hundred cents on a dollar, will be answered here at the heart of retail selling.

What is the heart of retail selling? When a customer comes in and a representative of the store comes face-to-face with him. At that point, the sale is made or it is lost. Right at that point, all the money spent on all of those other things can be lost if that salesman—the representative of the store—does or says the incorrect things.

If the salesman isn't a good, effective representative of the store,

(Continued on page 23)

Special Notice to **DEALERS**

Here's a message aimed at helping your business in 1956.
With U.S.D.A. approval a reality, the requirements of growers for corn borer granular pesticides will be big. Be ready!
Discuss the matter early with the processors who supply you.

the news you've waited for

Best Way to Control Corn Borer

. . . Granular DDT made with "GRANULAR ATTACLAY"

With the *new, approved* Granular DDT method —made even better by the original pioneer carrier, *Granular Attaclay*—you can be sure the corn borer won't menace your corn profits.

Advantages of Modern Granular Pesticide Method:

SAFETY—Graze stock or make silage after harvest with a new safety never possible with previous control methods.

ECONOMICAL—An application kills corn borers for a much longer period than ever possible before.

EFFECTIVE—Hits the stalk, filters to the whorl, kills the borers at point of greatest danger—where leaf joins stalk.

RECOMMENDED—Fully approved on the basis of large-scale work by U.S.D.A. and the State of Iowa on Iowa corn ground.

Corn Growers With Borers To Kill...
Dealers With Growers To Satisfy...
All specify . . . Granular Attaclay

Why you should demand Granular Pesticides made with "Granular Attaclay"

Granular Attaclay is the material (carrier) on which the pesticide manufacturer puts the poison. By weight, our carrier is about 95% of the finished product you buy, so *quality* and *dependability are important.*

Advantages of "Granular Attaclay"

- Excellent poison release properties
- Uniform particle size distribution
- Almost no drift . . . goes where it's aimed . . . no waste
- Doesn't clog applicator . . . trouble-free to apply
- Larger "pay load" when applying
- No caking in storage
- Produced by a major pioneer supplier of carriers for pest-killing chemicals . . . dusts, wettable powders, granular soil pesticides, herbicides, fungicides, etc.
- Result of years of painstaking research in our own laboratories and with major formulators.

Valuable Bulletin Available—
A fact-filled bulletin on corn borer control and granular pesticides is just off press. Fill in and mail coupon today for your free copy.

GRANULAR ATTACLAY *is a product from*
MC MINERALS & CHEMICALS CORPORATION OF AMERICA
MENLO PARK, NEW JERSEY

"BUY EARLY"
makes good sense to processor, dealer, grower.

Minerals & Chemicals Corporation of America
1000 Essex Turnpike, Menlo Park, N.J.
Please send me free copy of your bulletin on corn borer control and granular pesticides
name_____
address_____
city_____ zone____ state____
(I'm a grower ☐; dealer ☐; processor ☐)

FARM SERVICE DATA
Extension Station Reports

It's a guess—but one based on lots of farm experience—that weeds competing with crops are costing North Dakota farms up to $1,000 a year. R. B. Widdifield, agronomist of North Dakota Agricultural College Extension Service, believes the thousand dollar estimate is pretty close to right.

He points out a loss of this kind per farm means North Dakota is out about $60 million a year on account of weeds.

"Weeds reduce farm incomes and values by competing with crops for moisture, food and sunshine; by causing extra tillage expense; by making it necessary to delay seeding; by dockage and lower market quality of the crops produced; by limiting crops which can be grown on weed-infested lands, and by lowering land values."

Mr. Widdifield calls attention to studies made in Manitoba which showed how seriously common mustard can reduce crop yields. Yields were obtained from weed-free grain plots and compared with mustard-infested plots right alongside. In 1953 weed-free flax yielded 14 bu. per acre. Ten mustard plants per square yard reduced the flax yield to 6 bu.; 25 mustard plants per square yard sent the yield down to 3 bu., and 100 mustard plants per square yard cut the flax yield to 1 bu. an acre.

★

Fertilizer put on corn land last year may help this year's corn stalks break down more easily, according to Jack MacGregor, University of Minnesota soils department. He says that farmers who are using enough nitrogen fertilizer on their corn have found that corn stalks "break down" more easily when disced the following spring. One reason for this more rapid breakdown is that the stalks produced on the fertilized land actually contain more nitrogen—and this extra nitrogen serves as part of the food for the "bugs" which decompose cornstalks, Mr. MacGregor says.

An analysis of cornstalks on several experimental plots in the state showed that on sandy soils nitrogen fertilizer increased the total nitrogen in the stalks from at least 13 and up to 40 lb. per acre.

On finer-textured soils, nitrogen resulted in increases of from 20 up as high as 36 lb. per acre. Experiments also showed that putting on 60 lb. of nitrogen for growing corn can increase the nitrogen content of the dry stalks as much as eight pounds per acre.

★

Average corn yields on Indiana farms can be increased ten bushels per acre by raising the fertility level of Indiana soils.

Purdue University's agronomy department has estimated that Indiana's average corn yield can be raised to 64 bu. per acre by increasing the average rate of fertilization from the present 275 to 400 lb. per acre. The three year (1953-1955) corn average in Hoosierland stands at 53.7 bu. per acre.

An additional 125 lb. of fertilizer per acre will cost just $4 while the extra 10 bu. of corn it produces will be worth $11.50 at the current market price.

R. E. Stivers, Purdue extension agronomist, says that while these figures are state-wide averages, an individual farmer can increase his corn yields by treating his soil according to its needs. Soil tests will determine the need for lime and plant food. Limestone and fertilizer should then be applied according to recommendations based on soil tests.

A row application of not less than 10 lb. per acre of phosphate fertilizer is recommended for corn even though the soil may test high in available phosphorus. Phosphorus enables the young plant to make an early, rapid growth while its root system is still small, according to Mr. Stivers. Thirty pounds per acre of phosphate is required to regularly produce an 80 bu. yield on soil testing "medium" in available phosphorus.

Nitrogen fertilizer applied along with phosphate will increase the uptake of phosphorus. On some Indiana soils, particularly those which are poorly drained, this will result in an increase in yield.

All of the potash fertilizer needed for one rotation can be broadcast and plowed under before corn unless more than two years of hay are grown. The amount of potash needed to regularly produce an 80 bu. yield on soil testing "medium" in available potash is 30 lb. per acre.

Nitrogen fertilizer needs for corn are based primarily on the soil and its cropping history. Corn following grass sod on light colored soils may require up to 120 lb. per acre of additional nitrogen for an 80 bu. yield.

★

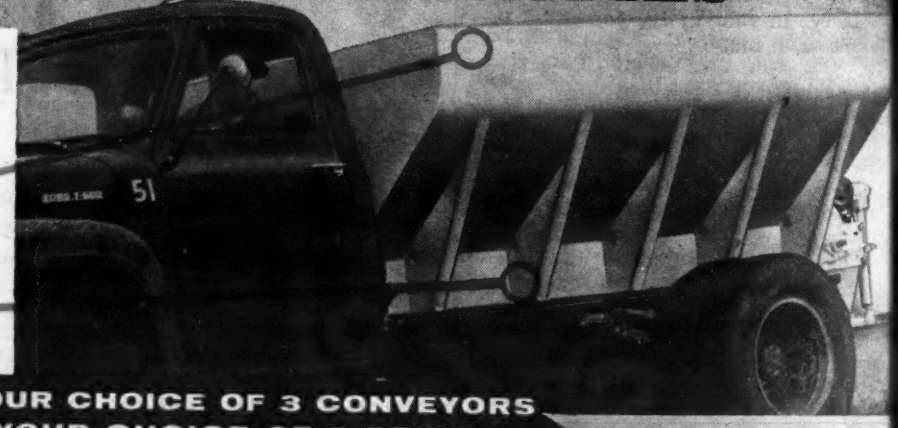
Falling Illinois farm income in 1955 was reflected by a drop in fertilizer use for the second straight year, according to L. T. Kurtz, soil fertility specialist at the University of Illinois College of Agriculture. He says, however, that fertilizer sales are still comparatively high.

Peak year for fertilizer use in Illinois was 1953. Mr. Kurtz doesn't have the complete 1955 picture yet, but his guess is that last year's sales will be 10 to 15% below the 1953 level, but

NEW BAUGHMAN SP

Compare Quality and Prices... WE H

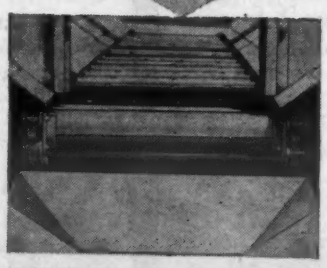
THE NEW BAUGHMAN K-5
LIME and FERTILIZER BODIES



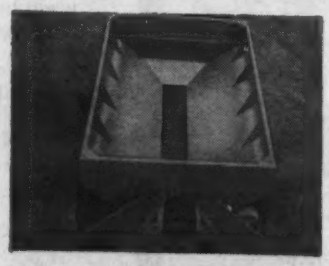
MORE RUGGED BODY
- Reinforced Top Edge
- Extended Jacks for full side support
- Internal Bracing

YOUR CHOICE OF 3 CONVEYORS
YOUR CHOICE OF 3 DRIVES
Each designed for a definite job
Ask for our recommendations

CONVEYORS



DRAG CHAIN CONVEYOR
20" wide. New, heavy duty—having two 20,000 lb. test malleable block chains, welded together with 4" spaced cross drags.



CHAIN BELT CONVEYOR
12" wide. Provides even flow of material to distributor. Links tend to break up small lumps, eliminating endgate plugging. Requires no shields, compartments or chokes. Positive sprocket drive.

BELT CONVEYOR
20" wide. Provides smooth even flow of material, even in smallest quantities. Double corrugated drum drives give more belt pull. Needs at least one compartment to ease load on belt. For dry material.

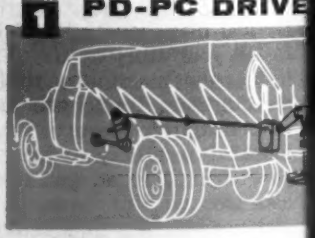
DRIVES

1 Power-take-off driven Distributor and Power-take-off driven Conveyor Drives direct to heavy 44-1 sealed gear case, mounted left or right, and by short #60 chain to distributor case. Has two speeds on conveyor and distributor. (High) for Lime; (Low) for Fertilizer. Has 1-3/16" drive shafts. All bearings sealed against fertilizer.

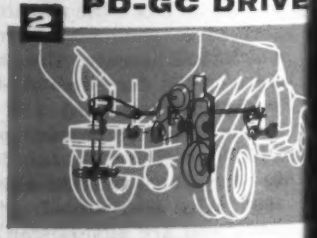
2 Power-take-off driven Distributor and Ground drive Conveyor. Drive can be mounted left or right. Has two speeds. (High) for lime and (Low) for fertilizer. Patented Baughman Ground drive Conveyor gives an even discharge of material in any gear or speed of travel. (Actually Ground Driven.) GC Models have SPREADING CHART showing accurate endgate settings for volume.

3 Hydraulic motor which drives Distributor is powered by hydraulic pump on power-take-off. Baughman Ground drive powers Conveyor.

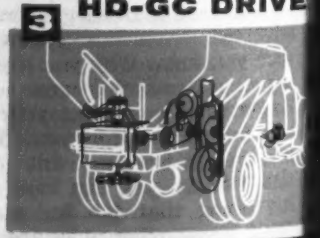
1 PD-PC DRIVE



2 PD-GC DRIVE



3 HD-GC DRIVE



BAUGHMAN
BAUGHMAN
The pioneer and largest manufacturer by far of lime and fertilizer spreading equipment.

still third largest in history. His estimate is based on the report of sales by registered Illinois fertilizer firms.

As an example of how much the fertilizer business has expanded in recent years, take a look at these figures. Illinois farmers used only 1,000 tons of nitrogen in 1939. By 1953, Illinois crops were getting the aid of 75,000 tons of nitrogen.

Mr. Kurtz believes a good fertilizing program is just as essential today as good rotation, efficient machinery and other cost-cutting farming methods. He favors continued high use of fertilizer. Even with today's heavy fertilizer applications, we are not replacing plant food removed each year by intensive land use, he says.

★

Grain sorghum can generally be grown with rotations in the same place as other cultivated row crops, according to E. S. Dyas, Iowa State College extension agronomist.

As with corn, good fertilizer practices are necessary, Mr. Dyas adds. In drouth years, sorghum yields more than corn and thus requires more nitrogen. Normally, fertilizer requirements are similar.

Seed treatment of sorghum is often necessary to control head smut, kernel smut, root rots and seeding diseases. These diseases will be more prevalent in warm, moist weather.

Insects can cause damage at times. Earthworms, army worms, chinch bugs and aphids are chief offenders. Grasshoppers damage sorghum less than any other crops. In 1954, corn check test plots at Ames, Iowa were badly damaged by corn borers, while sorghum in the same test was hardly affected.

★

A well-timed 2,4-D spray early this spring will keep yellow rocket from ruining hay crops, according to Don Peterson, University of Wisconsin agronomist. He says the weed starts growing before legumes, and advises farmers to plan on spraying hayfields with 2,4-D amine as soon as the snow is off the ground, but before the hay has made an inch of growth. Make this application on any hayfield where yellow rocket was a problem last year, he advises.

★

Adding superphosphate to barnyard manure can pay off in two ways, reports the Middle West Soil Improvement Committee: (1) The superphosphate gives the manure a better plant nutrient balance. (2) It helps the manure hold nitrogen that might otherwise be lost.

"Manure is rather low in phosphate," the committee points out. "Agronomists estimate that a ton of manure without bedding can average about 10 lb. of nitrogen, 5 lb. of phosphate and 10 lb. of potash. By adding 25 lb. of superphosphate to each ton, you can increase the manure's phosphate content to 10 lb. per ton.

"It pays to take good care of the manure produced on your farm. Wisconsin agronomists estimate that the manure from a 20-cow dairy herd can be worth as much as $600 in plant food each year."

Agronomists recommend adding the phosphate to the manure before it is spread in the field, according to the committee.

"One of the easiest ways," says the committee, "is to put superphosphate in the gutters of the stable or open-run barn at the rate of one pound per cow per day. Bedding is needed to hold the liquids. Straw, shavings, sawdust or other litter can be used.

"Another method is to place the superphosphate in the spreader as the manure goes onto the field. Agronomists advise adding anywhere from 25 to 50 lb. per load."

★

Farmers aiming for high yields of small grains, should be sure that the crop has plenty of readily available nutrients to carry it through the cooler months of the year. That's the advice of University of Missouri soils specialists.

These specialists point out that small grains make much of their growth during the cooler months. In these periods of lower temperature, organic matter decomposes at a slower rate. Hence there is less release of soil nutrients for the benefit of the small grains. By the time the soil warms up and organic matter decomposition speeds up the release of nutrients, small grains have usually matured and are ready for harvest.

So if farmers are to obtain high yields, the small grains must be supplied with adequate amounts of quickly available nutrients when they are required.

The Missouri soils men say that starter fertilizers should be added in most soils at the time the small grains are seeded. The nitrogen content of the starter fertilizer should be higher when the seeding is late, and where large amounts of straw or corn stalks are plowed under.

In addition to starter fertilizers, it is advisable to top-dress most small grains with nitrogen. The Missouri specialists say that under most conditions, about 40 lb. of nitrogen will give the most profitable returns.

★

More than half the farmers in Illinois believe weather and weeds are the most serious factors limiting soybean production, according to results of a soybean production survey taken in 1955.

That opinion is generally shared by farmers in all nine crop reporting districts in the state. For the state as a whole, the two are about equally rated.

The soybean production survey was undertaken in the major producing states at the request of the American Soybean Assn. J. C. Hackleman of the agronomy department at the University of Illinois College of Agriculture directed the Illinois survey.

The three most troublesome weeds reported were velvetweed, smartweed and pigweed. Ragweed was named serious in the four southern districts. Only a handful of farmers had used chemicals to control weeds.

SPREADERS

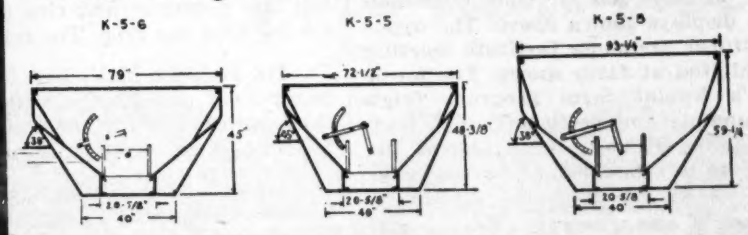
WE HAVE NO COMPETITION!

ODEL 235
TTACHMENT
SPREADER

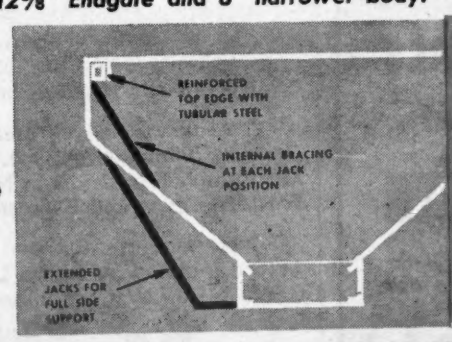
Optional) Holds mate-
al close to the ground.
hoto shows open posi-
on (less than 8') for
ighway travel.

ugged on top! Durable on the side! The rolled top edges
re reinforced with 2" square tubular steel, protecting
e body from denting by end loaders and shovels.
Welded external jacks provide full-length reinforcement
nd support of body. Welded internal bracing in same
ositions provides full load strength under all operating
onditions. Strongest body ever built!

Body styles and widths available in Chain Drag and Belt Conveyor Models.



Chain Belt Conveyor Models also available in three sizes with 12⅝" Endgate and 8" narrower body.



STRONGEST SPREADER BODY EVER BUILT!

CHECK THESE LOW PRICES!

EXAMPLES

10' MODEL K-5 CHAIN PD-PC Drive —		10' MODEL K-5 CHAIN PD-GC Drive —		10' MODEL K-5 CHAIN HF-GC Drive —	
Power-take-off driven Distributor		Power-take-off driven Distributor		Hydraulic driven Distributor	
Power-take-off driven Conveyor		Ground drive Conveyor		Ground drive Conveyor	
Body Price	$450.00	Body Price	$450.00	Body Price	$ 450.00
Drives	250.00	Drives	500.00	Drives	1050.00
TOTAL	$700.00*	TOTAL	$950.00*	TOTAL	$1500.00*
235 Attachment	185.00		185.00		185.00

*Power-Take-Off, Freight, Mounting and Taxes to be added. Prices F.O.B., Jerseyville, Illinois.

Prices on Belt Chain and Belt Conveyors available on request. All models, except chain belt, available with single or double distributor.

Duty BULKMOBILE. Huge Capacity (740 Cu. Ft. Cap. shown here). Full
ydraulic or gas engine operation with hydraulic conveyor. Ideal as "parent"
ck for feeding spreaders in the field. All sizes.

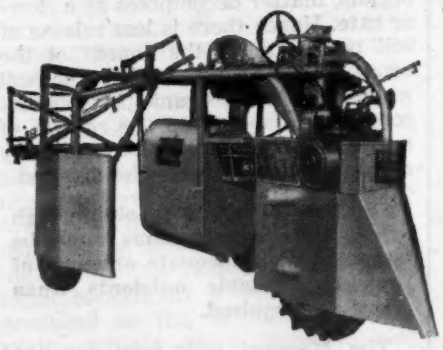
DEALERS WANTED IN SELECTED AREAS

For further details WRITE TO:
J. E. CADLE, Sales Manager
Baughman Manufacturing Co., Inc.
Jerseyville, Illinois

Manufacturing Co., Inc. JERSEYVILLE ILLINOIS

You'll see more Baughmans on the highway than all other makes!

MERCHANDISING DISPLAYS—Doing an effective job for Olin Mathieson Chemical Corp. and its dealers are the two displays shown above. The upper display was used first at the recent Agricultural Ammonia Institute meeting at Kansas City, and is currently being exhibited at farm shows. The lower display, which describes the corporation's 4-point farm program (high analysis fertilizer, irrigation, anhydrous ammonia and pesticides) has been used at the meeting of the National Vegetable Growers Assn. and at the Pennsylvania and New Jersey farm shows. It is scheduled to be shown at additional farm shows, the company says.



GIVE
YOUR CHEMICALS
Better Placement
With THE HAHN HI-BOY

The Self-Propelled, High Clearance Sprayer for Both Row and Field Crops.

Sprays Farm Chemicals Accurately Wherever They're Needed

Spraying corn crops with HI-BOY quickly eliminates corn borers, earworms, and other trouble-makers.

Hi-Boy's accurate spraying of cotton leaves makes for more effective bottom defoliation.

- Reduces boll rot
- Speeds up boll opening for earlier cotton picking
- Makes machine-harvesting easier
- Yields cleaner cotton
- Increases picker efficiency

The HI-BOY is the standard by which other sprayers are judged!

HAHN, Inc.
1831 W. Franklin St.
Evansville 12
Indiana

HAHN HI-BOY
THE HI-SPEED SPRAYER

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Production of superphosphate in 1955 totaled 2,310,306 short tons, a gain of 3% over the 1954 output of 2,237,900 short tons, according to the U.S. Department of Commerce. Escambia Bay Chemical Corp. dedicated its new $25 million nitrogen plant near Pensacola, Fla.

Nitrogen Division, Allied Chemical & Dye Corp., announced that it will install at its Hopewell, Va., plant facilities for production of solid ammonium nitrate. The firm also plans to place into operation at its Omaha plant new facilities for production of additional nitrogen fertilizer solutions. . . . National Farmers Union will erect a multi-million dollar fertilizer plant in Arkansas.

Current capacity for production of anhydrous ammonia was estimated at 4,072,000 tons NH_3 by the U.S. Department of Commerce. The department also said that more than 450 million pounds of toxic materials (not including formulations) were produced in 1955 . . . Swift & Co. announced that it would construct a new plant food factory in Pompano Beach, Fla.

The importance of good management in glassland farming was stressed at the annual meeting of the Association of Southern Agricultural Workers.

Chipman Chemical Co. announced plans to build a 2,4-D plant in Portland, Ore. . . . Fertilizer dealers at Wisconisn Farm and Home Week were told that today's high production costs make it necessary for farmers to get every crop acre to produce to the limit of its capacity.

Stauffer Chemical Co. and Wilson & Geo. Meyer & Co. signed a long-term exclusive sales agreement whereby the Meyer firm will broaden its distribution in the West and Midwest to handle the increased production of new pelletized agricultural phosphates made by Stauffer.

Grace Chemical Co. said it would authorize $100 million in capital expenditures in 1956, with some 40% of this total going into chemical expansion. . . . The USDA recommended an 8% cut in total acreages devoted to summer and late potatoes; and rice growers of the U.S. approved marketing quotas for the 1956 rice crop. The referendum was held Jan. 27.

Dr. Malcolm McVickar, for many years associated with the National Fertilizer Assn. and later with the National Plant Food Institute, was appointed chief agronomist for the California Spray-Chemical Corp. The appointment was to become effective April 1, 1956.

Merger of the Wilson Chemical Sales Co., Portland, Ore. with Great Western Chemical Co., was announced. Richard H. Wilson is general manager of the new operation. . . . Dallas Cantwell, formerly agronomist with Spencer Chemical Co. joined Southern Nitrogen Co. at Savannah, Ga.

Diamond Alkali Co. announced appointments of L. J. Polite, Jr. and John W. Kennady to new positions. Mr. Polite is now product sales manager for a group of organic chemicals and Mr. Kennady is sales manager of agricultural chemicals for the company.

Two new sales representatives were appointed by Grand River Chemical Division, John Deere & Co. They were Bruce Campbell and Norman Messick. Mr. Campbell operates in Nebraska and Kansas; Mr. Messick in New Mexico, Western Texas and Eastern Arizona.

New facilities for the manufacture of granular high-analysis fertilizers were completed at Perry, Iowa, by Davison Chemical Co., Division of W. R. Grace & Co. . . . Corn borers were found infesting the stalks of cotton plants in Missouri and Tennessee. It was the first such incident to be reported.

California Spray-Chemical Corp. began operations at its new liquid fertilizer plant near Modesto, Cal. Capacity of the plant is 400 tons a day of aqua ammonia and 100 tons of neutral mix fertilizers. The plant was reported to be the forerunner of a $16,000,000 expansion program on the part of Standard Oil Co. of California, of which Calspray is a subsidiary.

Agricultural groups meeting in Portland, Ore. Jan. 15-18, heard talks on systemic pesticides, insect resistance, and new methods of control. The Pacific Northwest Agricultural Chemical Industry groups in joint sessions included the Northwest Vegetable Insect Control Conference, and the Western Cooperative Spray Project.

Dr. W. B. Albert, South Carolina Agricultural Experiment Station, Clemson, S.C., was elected president of the Southern Weed Conference at the group's meeting in New Orleans, Jan. 18. He succeeded Dr. C. G. Klingman, North Carolina State College, Raleigh.

That the capacity for nitrogen production in the U.S. was greater on Jan. 1, 1956 than the goal previously set by the Office of Defense Mobilization for Jan. 1, 1957, was announced in a report by the U.S. Department of Commerce. The total capacity of 3,618,000 tons existing at the first of this year is 118,000 tons greater than the goal of 3,500,000 tons ODM had hoped for a year later.

Stauffer Chemical Co. announced having located large minable deposits of high grade phosphate rock on its patents near Bear Lake, Idaho. Reserves in the deposits were estimated at over 5,000,000 tons of commercial grade rock . . . Phillips Pacific Chemical Co. announced that it would soon begin construction on a 200-tons-a-day anhydrous ammonia plant on its recently acquired site on the Columbia River near Kennewick, Wash.

Nearly 200 persons attending the 10th annual Wisconsin Insect Control Conference at Madison were urged to "follow the labels and don't take chances on residues" when using pesticides. Speakers included prominent figures in the industry, colleges, state and federal groups. . . . Dr. E. W. Stafford, Mississippi State College entomologist, was presented with a distinguished award for 39 years of service during the second annual Mississippi Insect Control Conference at Mississippi State College. More than 250 were in attendance.

Spencer Host to Winners in Corn Growing Program

KANSAS CITY — Twenty three "efficiency experts" in the art of growing corn gathered in Kansas City recently as guests of Spencer Chemical Co. The group, all vocational agriculture students, represented the top participants in Spencer's 1955 Efficient Corn Growing Program. Over 900 boys from eight states participated in the "learning by doing" activity which stressed use of up-to-date practices for efficient corn production.

With their vocational agriculture instructors, the boys met in Kansas City for three days of activity which included banquets, sightseeing and a trip to Spencer's Jayhawk Works near Pittsburg, Kansas.

To qualify for the trip each participant was required to grow at least two acres of corn. On one plot he followed corn-growing practices usually employed on his farm. On the other he used practices which, in his opinion would contribute to a more efficient and more profitable yield. He was also required to complete a detailed practice information sheet and harvest report which was evaluated to help determine the winners. Increasing the participant's knowledge and use of efficient up-to-date practices was stressed over maximum yield.

The average yield of the twenty-three winners on their new-practices' plot was 112.5 bu. per acre compared with 81.4 bu. from usual practices. The increase of 31.1 bu. was only half of the profit improvement story. Per bushel costs of raising the corn decreased 2.3¢ from 61.4¢ to 59.1¢, resulting in an average per acre increase in profits of $20.81 (corn at $1.20 bu.).

The basic reasons for the improved profit and efficiency were the increases in the use of fertilizer and number of plants per acre. The average stand was increased from 11,900 to 13,600 plants and the total fertilizer used from 83.5 lb. of plant food per acre to 206.8 lb.

On the average, the winners' plots received 105 lb. of nitrogen, 48 lb. of phosphate and 42 lb. of potash. This compared with their usual practice of 45 lb. of nitrogen, 23 lb. of phosphate, and 25 lb. of potash. In addition, most of the winners used modern pest control methods.

The real pay-off in the improved practices is that the increase in yields was accomplished with a decrease in unit cost of production despite greater expenditures ($16.51) for seed, pesticides, herbicides and fertilizer.

Borden Offers Fertilizer In Home Garden Size

NEW YORK — Packaging of its "Borden's 38" ureaform nitrogen fertilizer in sizes for home gardener use has been announced by the chemical division of The Borden Co.

The product will be offered in 2½ oz. shaker containers through retail florists and variety store horticultural departments primarily. One-pound and five-pound metal canisters and 25-lb. bags will be marketed through garden supply, nursery and hardware outlets. It will also continue to be sold in the 50-lb. bags in which it was first introduced to the wholesale horticultural market last year.

STRAWBERRY INSTITUTE

ALMA CENTER, WIS. — About 200 people from Wisconsin and Minnesota are expected at the Strawberry Growers' Institute here in the Odd Fellows' Hall March 27.

Insects Cost Ohio's Apple Crop $1,070,000

WOOSTER, OHIO—Losses to insects in Ohio's apple crop last year totaled $1,070,000, according to figures quoted by the USDA's cooperative economic insect report.

Of this figure, the codling moth accounted for the greatest loss, $80,000, with orchard mites next, at $70,000. Red-banded leaf roller and apple maggot caused losses of $40,000 each and plum curculio followed with $20,000. Aphids and other miscellaneous insect pests accounted for an additional $20,000 loss, bringing the total to $270,000.

Added to this was the cost of insect control. The Ohio apple crop of 4 million bushels was worth about $8,000,000. The cost of about 20¢ a bushel for pest control was apportioned as follows: codling moth, $500,000; orchard mites, $130,000; red-banded leafroller, $50,000; apple maggot, $48,000; plum curculio, $40,000; rosy aphid, $16,000 and other miscellaneous pests, $16,000. These, totaling $800,000, added to the actual loss suffered in spite of efforts to control the insects, come to the figure of $1,070,000.

SEED CERTIFYING AGENCY

ATLANTA—The Georgia General Assembly has unanimously passed a bill making the Georgia Crop Improvement Assn. the legal seed certifying agency in the state. This is the first time in the state that an agency has been named the legal authority to certify seeds.

Wisconsin Fertilizer Sales Show Decline Of 2.7% in 1955

MADISON, WIS.—Fertilizer sales in Wisconsin during 1955 totaled 422,044 tons, a 2.7% decrease from 433,713 tons a year earlier, according to the state Department of Agriculture.

The 1955 sales included 344,625 tons in the spring and 77,419 tons in the fall, compared with 350,385 tons in the spring and 83,328 tons in the fall during 1954.

A breakdown of sales in 1955 shows 311,175 tons of complete mixed goods, 79,369 tons of phosphate and potash mixtures, 3,141 tons of superphosphate and 28,359 tons of other materials.

Are you using
OUR IMPROVED
DUVAL
Muriate of Potash ?
• HIGH ANALYSIS
• IMPROVED PHYSICAL CONDITION
DUVAL SULPHUR and POTASH CO.
Modern Plant and Refinery at Carlsbad, New Mexico
Please address communications to
ASHCRAFT-WILKINSON CO.
Exclusive Distributors
ATLANTA, GEORGIA
Cable Address: Ashcraft
District Offices
NORFOLK, VA. • CHARLESTON, S.C. • TAMPA, FLA.
JACKSON, MISS. • COLUMBUS, OHIO

Doing Business With

Oscar & Pat

When Oscar came back from lunch that sunny March day, he saw hatless, good looking Bert Maher, advertising manager of the local Gazette, talking to Tillie Mason. The man had a black briefcase in one hand in which he usually carried newspaper mats, proofs, etc.

Now as Bert Maher saw Oscar, he stiffened a little, because Oscar and he had had a few arguments about the merits of advertising, and Maher knew that Oscar didn't like him. In fact, Oscar thought that if a business would cut its advertising by about three fourths, it would make more money.

Oscar was never one to beat around the bush. "Is Pat going to advertise again this week?" he asked coldly.

Bert Maher flushed a little. "Well, yes, he has a good idea."

"Good idea!" snapped Oscar. "Do you know what would happen to this business, if I didn't sit on about 75% of the good ideas that Irishman gets? Well, we would be broke—busted, that's what! We would not be here. We would not be doing any advertising at all, and you would not be getting a red cent for ads from us."

"Oh, come now, Oscar," said Bert Maher, trying to hold his temper, "you know that good advertising brings results. All successful firms believe in advertising and practice it regularly. It has been proved time and again."

"Yes," said Oscar relentlessly, "it has been proved to be a good money raiser for you. You are making a good living at it, and we pay for it."

Bert Maher was about to make a hot retort, but he saw Tillie Mason holding her fingers to her lips, so he counted to twenty. But as Oscar kept running down advertising and all those connected with it, Bert finally pointed outdoors to a white church with a tall steeple and bell.

"How long has that church been there, Oscar?" he said sharply, his voice choked with emotion.

Oscar looked puzzled. "How long? Why, it's been there over 100 years people say."

"Well," said Bert Maher, with tight lips. "They still ring the bell, don't they?"

Oscar was so mad he could have thrown the glass receptacle of retrieved paper clips at Maher, but just then Pat McGillicuddy came in the door.

"Hi, Bert," he said. "Got that press proof of our full page ad?"

Oscar paled. "Full page!" he roared. "Have you gone crazy, Pat? A one column six inch ad is big enough for us. Who do you think we are, the A.&P. food store, or something?"

Bert Maher opened his briefcase and pulled out a big piece of folded paper and gave it to Pat. "I think I had better go," he said. "Telephone me when you want me to come over and pick up the corrected proof."

"Okay," Pat said quietly, "Oscar and I want to discuss this ad a little."

"Discuss it," roared Oscar again. "We want to cancel it. Already our delinquent account list looks like a stuffed sausage. Let's get some of our money in before we start spendin' more. Ach, I never saw such foolishness."

Pat's eyes glinted, but he kept his peace. "Oscar," he said, "no matter if business is good or bad, we have to go on every day, buying merchandise to sell. We also have to sell, and we also have to keep the books up to date. And we have to advertise.

"We will always have problems. Just because a few men haven't paid us this month—remember it's tax time—then we just can't suspend all our normal business operations. W have to keep goin'."

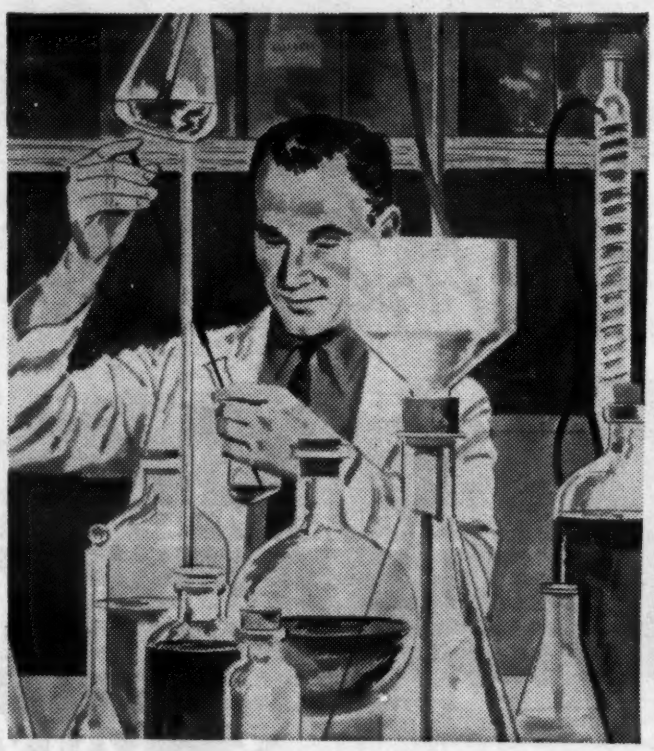
"Ach, we will go so fast we'll la up in a crash," Oscar said gloomil "I would think you'd learn, Pat. Yo spend too much. You always look the rosy side of life. Now, let's g some sense and cut down on adve tising. A full page, no, but maybe quarter page. Let's have a look it."

Grimly, Pat opened the full pa ad. The headline at the top sai "Does it Pay to Fertilize?" Then co stated, "Read what experts such the county agent, professors of agr cultural colleges, high school agricu tural teachers and others say abo the wise use of fertilizer."

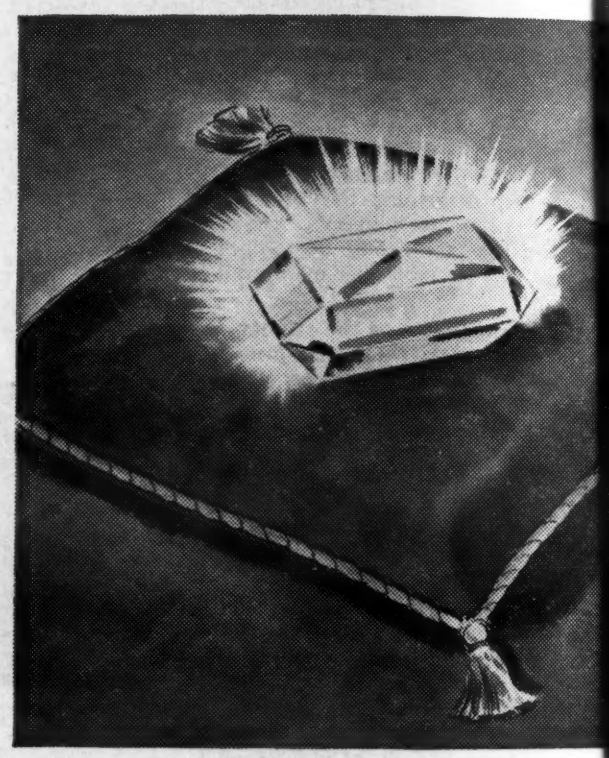
Much of the top half of that pa was devoted to the reprinting of se eral articles about the wise use fertilizer. There were about 10 cli pings in all, reproduced in part, a the material quoted some importa men.

Pat looked at Oscar. "You se Oscar, when we tell farmers it pa

ORTHO always has led the way i ffecti



FIRST WITH CAPTAN—developed by ORTHO—one of the most valuable of all fungicides today. Potent enemy of certain scab, brown rot, blight, botrytis diseases and many other plant diseases. ORTHOCIDE, a superior formulation of captan, protects against diseases and promotes healthier yields—materially raises your percentage of net profits.



FIRST WITH LINDANE. ORTHO Research was the first isolate the gamma isomer of the versatile insecticide Benzen Hexachloride. We know it as Lindane, the active ingredient ORTHO formulations sold under the brand name ISOTOX Growers find this chemical enormously effective against in sects, with a remarkably wide range of application.

ORTHO BUILDS BETTER YIELDS

"Fustest with the

Sign up with ORTHO and you're associated with the leader; you get the benefit of *all* the technical background — all the laboratory and field research — and all the formulating skills that have made ORTHO the number one line of agricultural chemicals in America today.

You get ALL these values when you sell ORTHO — consistently "Fustest with the mostest" in developing agricultural chemicals that have proved to be both effective and economical.

ORTHO Fieldmen — graduate entomologists and agricultural scientists — can isolate crop insect and disease problems and prescribe the quality-controlled ORTHO products to help correct them.

Remember, too, that when you sell the ORTHO program, all the personal, on-your-ground technical advice and services of your ORTHO Fieldman are provided gladly and without any extra charge. Get this plus value for your customers. Let the leader lead *you* to better yields and to bigger profits!

T. M.'S REG. U. S. PAT. OFF.: ORTHO, ORTHOCIDE, ISOTOX, VAPOTONE, ORTHOL-K, VOLCK ON ALL CHEMICALS, READ DIRECTIONS AND CAUTIONS BEFORE USE.

fertilize, some of them think we that just because we want to sell re merchandise, but when profes- and county agents say it, more rmers believe them than believe ."

"Well, if they don't believe us why they come and buy from us?" car asked logically. "Our business ew over last year."

"Sure it did," Pat conceded, "but still aren't getting enough busi- from some farmers. This ad almed to reach them, to add m to our list of customers. And may also convince our present tomers to buy more fertilizer r acre."

"Ach, we could shorten that ad," car said, "and not print the clip- gs. Just say in the ad that we ve all these clippings posted on bulletin board, and interested rmers could come and read them. hat's the use of printing all the clippings for farmers that don't want to read them?"

"But if we posted the clippings on the bulletin board only a few farmers would see and read them," said Pat patiently. "If we print them in the paper many more farmers will see them."

"Mostly farmers that don't pay their bills," Oscar said acidly "and that kind of business we can get along without."

Pat's face got red, and he counted to ten just as his wife Nora had told him to when Oscar became exasperating. "All right," he snapped suddenly. "I'll cut the page in half. I'll boil it down—just this time, tho." And he grabbed the ad proof and went out the door and down the street to the newspaper plant.

For a moment Oscar stared at the closed door. Then a rare smile, the smile of victory swept over his florid features. "Ah, I won!" he said suddenly. "For once, I won. Just wait until I tell Minnie tonight."

Swaggering, he went back to his desk and sat down, his back straight as a ramrod. Before he picked up a sharp pencil to figure a discount, he snapped both his suspenders sharply. The elastic stung his chest a little, but Oscar didn't mind it.

"By golly," he said to himself. "For once Pat saw I was right. Maybe common sense can win out once in a while. Now, I will work twice as hard to cut expenses."

FARM INCOME DOWN

EL PASO, TEXAS—Farmers along the Upper Rio Grande River took a 25% reduction in income in 1955, according to W. F. Resch, manager of the Rio Grande Project. The annual report just released shows that total farm revenue dropped from over $41 million in 1954 to about $32 million in 1955. Several reasons were given for the decline, with the two major ones being a poor growing season and shortage of irrigation water. Cotton income dropped more than any other crop.

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

All of us are happy in this neck of the woods. We are having some of the best rains we've had in five years . . . . not hard rains, but just right to soak right on down into the ground, and of course everyone knows that it means a better crop year.

Attended a mighty good meeting recently; one of four held throughout the state. Attending were agronomists from the experiment station, fertilizer representatives from several of the companies and fertilizer and seed dealers from several counties. Along with this group were the county agricultural agents.

If you've never held a meeting of this nature in your area, this county agent certainly recommends and suggests that you do it. It is worth its weight in "tonnage" of plant food as well as income for the farmer.

We've just held our eleventh annual farmers' institute here in Washington County. This is sponsored annually by the Chamber of Commerce, Farm Bureau, National Farm Loan Assn., Production Credit Assn. and with the Agricultural Extension Service cooperating.

The institute is attended by farm families, business men, extension people, dealers, bankers . . . . some 500 people all told.

One of the highlights each year is a panel discussion. One year the panel was on "Fertilizer and Grass." Another was, "Youth's Responsibility," another, "Parents' Responsibility" and this year, it was, "Community Responsibility."

Sid Chandler, district agent of the Georgia Extension Service was the moderator. On the panel were our state community specialist with extension service, a president of one of out twenty organized community clubs, a successful country pastor, a school teacher, a farm homemaker, and an outstanding 4-H Club girl. Our banquet speaker was W. R. (Dick) Bryan, Public Relations Division, Goodyear Tire and Rubber Co. E. V. Landers, vice president of Federal Land Bank of Louisville, Ky. was the speaker at the opening session.

Value of High Fertility Soils Shown in Test

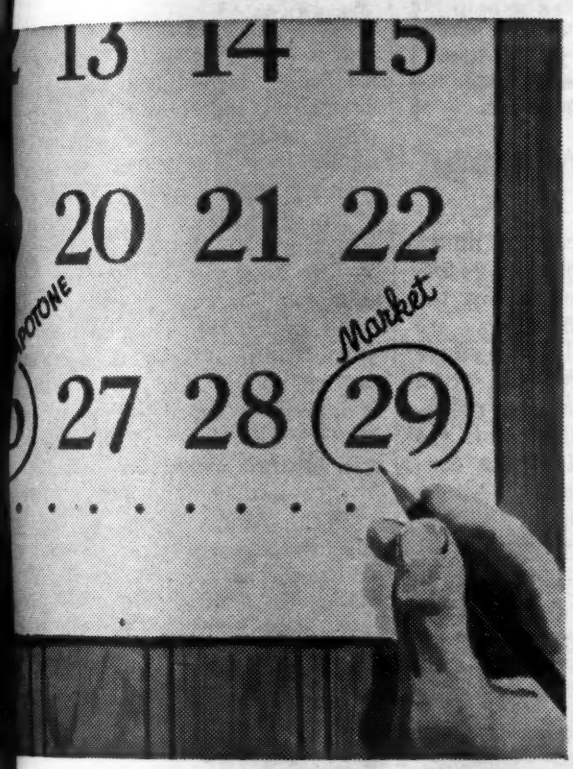
STILLWATER, OKLA.—The value of high fertility levels has been demonstrated in vegetable growing trials conducted by Oklahoma A&M College. Crops grown on high fertility soils showed increases in yield over those on low fertility soils of 68% for snap beans, 72% for tomatoes, 24% for sweet corn and 58% for cabbage.

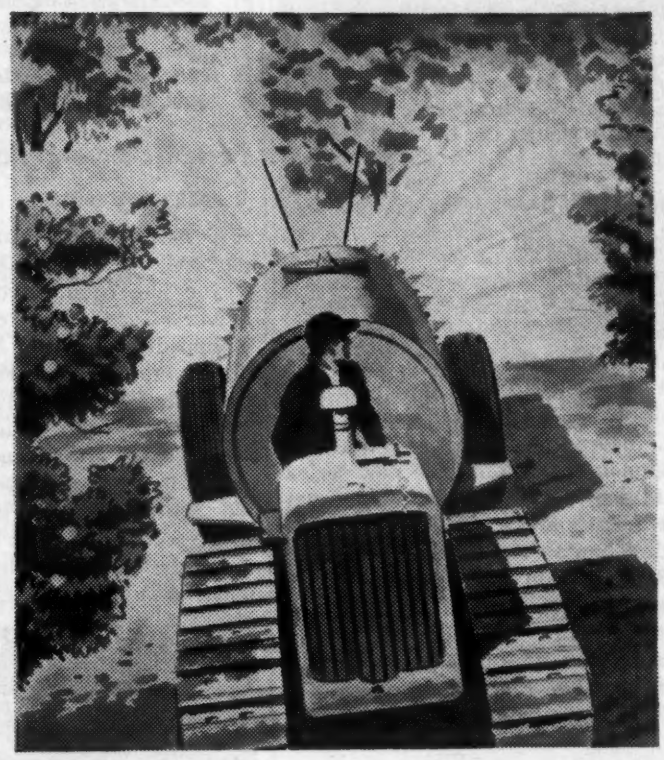
The high fertility soils received 500 lb. of 5-10-5 per acre, nitrogen and phosphorus side dressing and cowpeas and vetch green manure in summer and fall. The low fertility soil received no fertilizer and no green manure crops.

FEWER FARMS

COLUMBIA, MO. — The number of Missouri farms was reduced by 30,000 the past five years, according to 1955 Census of Agriculture figures. This left approximately 200,000 farms in the state at the end of the 1954 crop year.

ffective agricultural chemicals





ST WITH TEPP (tetraethyl pyrophosphate) dusts for agri- tural use. ORTHO Research developed a carrier to sta- ize the chemical until it reaches the plant and insects. Sold der the brand name VAPOTONE, ORTHO formulations TEPP can be applied to plants up to three days before rvest without leaving poisonous residues.

FIRST WITH FOLIAGE OIL SPRAYS—ORTHO Research first developed highly refined petroleum oil sprays in the form of new type emulsions and ready-mixes. Under such brand names of ORTHOL-K, and VOLCK these oil sprays today are known and respected by growers the world over. Include these top-choice oil sprays in your control program, too.

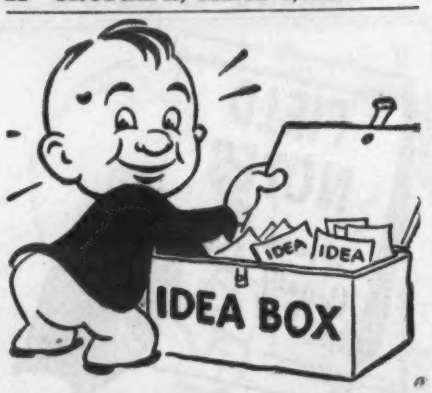
he mostest"

Attention Mid-west Dealers

This year get *your* share of big profits from protection against wireworms and seed corn maggots. The product is ISOTOX 25 Seed Treater F — another "ORTHO first." Big magazine ads have already pre-sold farmers. NOW push ISOTOX and make profits up to $13.86 per case. What's more: stock the full ORTHO line of agricultural chemicals to make sure you'll always be "Fustest with the mostest."

ORTHO
SCIENTIFIC PEST CONTROL
REG. U.S. PAT. OFF.

CALIFORNIA SPRAY-CHEMICAL Corp.
Offices throughout U.S.A.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6380—Fertilizer

"Shur-Green" is the trade name of a new concentrated liquid fertilizer for lawn and garden use, manufactured by Continental Fertilizer Co. It will be available to most areas in the Midwest this spring, according to company officials. The new product comes in a concentrated liquid form which is applied as the turf or soil is watered. The garden hose is attached to an attachment called a "gro-gun" at the top of a quart container, and as the water sprays through the dispenser, the liquid fertilizer and water is automatically mixed. An average lawn can be fertilized in this manner in approximately 15 minutes, it is claimed. Secure more complete details by checking No. 6380 on the coupon and mailing it.

No. 6379—Liquid Fertilizer Booklet

Available to readers is a new booklet, "Neutral Liquid Fertilizer," a publication prepared by Fabricated Metals, Inc. The booklet states that the company can provide "package plants engineered for almost automatic operation at various desired capacities." The company offers two plans: The do-it-yourself package which consists of the essential plant elements upon which there are patents pending. The converter or cooler, reactor assembly, transfer equipment, necessary valves and fittings are shipped direct to the site. The turnkey job provides all design, engineering, construction and installation for the manufacture of both aqua and neutral mixes. Information about costs, manufacturing margins, technical details, advantages and leasing details are included in the booklet. Check No. 6379 on the coupon and mail it to secure the booklet without charge.

No. 6381—Belt Conveyor

Sectional belt conveyors in standardized, pre-engineered units with capacities ranging up to 1,500 tons per hour are described in a new Link-Belt Co. book No. 2579. The new conveyors called by the trade name, Pre-Bilt, incorporate standard Link-Belt components, including the new series 50 idlers, packaged with sectional truss frames and structural steel supporting bents. They are built in 18, 24, 30, and 36-in. belt widths, with 24 and 42-in. deep trusses. Drives range up to 40 H.P. More information is contained in the illustrated 8-page book No. 2579. For a copy, check No. 6381 on the coupon and drop it in the mail.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 5395—Aluminum Conveyor

A new line of aluminum multipurpose conveyors called Ve-Be-Veyor has been announced by the Oliver Corp. The conveyors are equipped with ⅓ hp, 115 volt, single phase motors with reversing drum control and power drive, gear reduction unit. No pulley adjustments are required at either end of the conveyor, the manufacturer says. A new "V-groove guide" principle is said to keep carrying belts centered at all times, eliminating the problem of belt run-off. Three sizes available are

12 ft., 16 ft. and 20 ft., weighing 149, 192 and 235 lb. respectively. Uses suggested by the manufacturer include floor-to-floor operations, as boosters for gravity lines, for loading and unloading vehicles, for moving and stacking packages in stores, factories, warehouses or on farms. For complete information, please check No. 5395 on the coupon and mail it to this publication.

No. 5383—Hydraulic Lift

The Crown Controls Co., Inc., has announced features of its new E-Z lift (model LT-1000) 1,000-lb. capacity hydraulic lift for use where limited space is a problem. The lift is for one-man operation and has a push-pull handle which operates the hydraulic mechanism located at a convenient height on the lift. Loads can be elevated to any height between 5¼ in. and 54 in. above the floor. The lift rolls smoothly on roller bearing equipped rubber front wheels and roller bearing equipped swivel-type rear casters. The positive-action brake is foot operated and has a trigger release. The lift is equipped with a safety overload release which refuses loads of more than 1,200 lb.

Constructed of strong tubular steel the lift is 64 in. high, 24½ in. wide and 35 in. long. It weighs 270 lb. The safety plate platform is 24 in. by 24 in. Straddle capacity is 16¼ in. Secure more complete details by checking No. 5383 on the coupon and mailing it.

No. 6378—Surface Active Agent

A new anionic surface active agent known as Isomal 265 has been developed by the Johnson-March Corp. which states that it can be used in all kinds of chemical processes as a wetting agent, rewetting agent, penetrant, detergent and emulsifier. It is specially formulated to reduce processing time, increase processing efficiency and improve finished products according to the company announcement. The fluid is described as a concentrated sulfonated ester type liquid. It is recommended as an emulsifier or dispersant in the manufacture of agricultural sprays and insecticides to give uniform and efficient coverage, the company claims. Clear in appearance, the product has a neutral pH factor and a specific gravity of 1.088 at 60° F. It is approximately 65% active and mildly pleasant in odor. It is available in 55-gal. steel drums. Secure more complete details by checking No. 6378 on the coupon and mailing it to Croplife.

No. 5384—Sales Brochure

A new sales management brochure, "Who's Selling Who?" is being made available by Cappel, MacDonald & Co. The brochure emphasizes the theme, "getting men to sell." In the foreword can be found the following phrase: "Fact No. 1. Salesmen and salesmanship are not perfect. (What is?). Fact No. 2, Sales, salesmanship and salesmen can be improved." It is explained further that the criticism offered is meant to be friendly and helpful to open the door, at least partially, to the room for improvement that exists. Secure the brochure by checking No. 5384 on the coupon and mailing it to this publication.

No. 6375—Tarpaulins

Heavy-duty vinyl plastic tarpaulins for a variety of horticultural and agricultural uses, including steam sterilization of soil and preservation of silage, are being made and distributed by Larvacide Products, Inc. They are sold under the company's Larvacover trademark and fabricated from a special vinyl formulation. They are recommended for use as soil-fumigation covers, greenhouse-bench liners to permit double-decking, erosion preventives, irrigation-ditch liners and water-conservation aids. The product comes in heavy-duty and standard (4-mil) thicknesses. Standard rolls are 100 and 150 ft. long and are available in widths of 6½ and 10 ft. However, the manufacturer will furnish custom sizes on request. Hemmed ends give the material better tear resistance and make it easier to handle. All seams are made electronical

Send me information on the items marked:

- ☐ No. 5383—Hydraulic Lift
- ☐ No. 5384—Sales Brochure
- ☐ No. 5387—Wall Products
- ☐ No. 5395—Conveyor
- ☐ No. 6373—Recording
- ☐ No. 6374—Handbook
- ☐ No. 6375—Tarpaulins
- ☐ No. 6376—Bulk Sales
- ☐ No. 6377—Pesticide
- ☐ No. 6378—Surface Active Agent
- ☐ No. 6379—Booklet
- ☐ No. 6380—Fertilizer
- ☐ No. 6381—Belt Conveyor

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

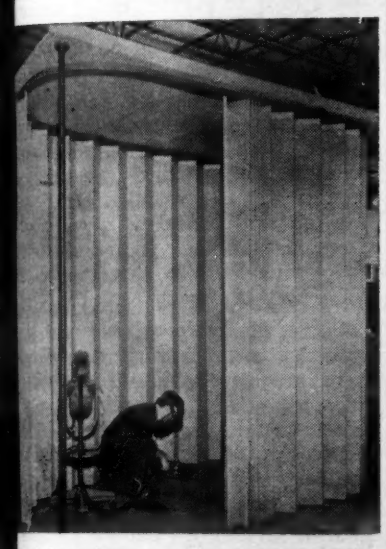
. Two colors—clear and dark green re available. Descriptive literature available by checking No. 6375 on e coupon and mailing it to Croplife.

No. 6377—Granular Pesticides

The Minerals & Chemicals Corporation of America, Agricultural Chemical Dept., has available its new issue of Attaclay Pesticide Digest which covers pertinent points on the subject of granular pesticides. The entire issue is devoted to granular pesticides in general and granular pesticide applications for the European corn borer in particular. Specialized field application rigs for these materials are illustrated and various mesh classifications are shown in actual size. Of interest also is a chronology of the corn borer. The issue is available without charge. Check No. 6377 on the coupon and mail it to Croplife.

No. 5387—Wall Products

New developments in the use of wall products manufactured by the TransWall Coated Products plant of the Bemis Bro. Bag Co. have been announced. The new plant is manufacturing and marketing the firm's products, called by the trade name, TransWall curtains, BemisWall curtains and Bemisorb. The TransWall



curtain makes use of an "area" noise control concept through the use of light-weight retractable sound barriers, according to the company. Installations are being used in many plants both for anti-noise work and for draft control. BemisWall curtains are a type of folding door or partition for general application in offices and other establishments. Bemisorb is a line of coated fabric for a broad range of industrial and technical applications. To secure more complete details check No. 5387 on the coupon and drop it in the mail to this publication.

No. 6374—Fertilizer Handbook

The soil improvement committee of the California Fertilizer Assn. is offering its "Western Fertilizer Handbook," now in its second edition, for $1 per copy. Orders may be sent directly to the California Fertilizer Assn., 475 Huntington Drive, San Marino 9, Cal. Called a reference work of interest to all persons interested in soil fertility and plant nutrition, the handbook contains 160 pages and features 12 color plates, most of which depict plant food deficiency symptoms. Many black and white illustrations and a glossary of tables, terms and conversions are also included. Single or multiple copies may be obtained for $1 each.

No. 6373—Recording

"The D-D Hop," a new "scat" tune, has joined "Boll Weevil Blues" and "Corn Huskin' Blues" in Shell Chemical Corporation's music library. Designed essentially as a commercial to accompany the firm's 26-week sponsorship of the noon weather show over the Tobacco Network in the tobacco belt, the tune has also been prepared as a full length popular recording. While it entertains, it tells the importance of soil fumigation and D-D's part in controlling nematodes. The recording features Julie Conway and the Nelsonics, backed by a 6-man musical group. People who want to use the platter can secure it by checking No. 6373 on the coupon and mailing it to Croplife.

No. 6376—Bulk Scales

A 2-color, 6-page bulletin describing three models of the class 38 automatic weighing unit for bulk materials is offered by Richardson Scale Co. The bulletin states that "these heavy duty scales are designed for handling dry, ground, granular, dusty and non free-flowing materials." The bulletin discusses construction, operation, feeding arrangements and capacities for the scales. Gravity, belt, screw and vibrating feed arrangements are shown in diagram. Special features such as hopper door flapper, locking gear, automatic compensation mechanism and automatic tabulator are described and illustrated. A complete line of accessory equipment, including a pneumatic gate assist, residue beam, remote electric counter, and agitators is discussed. A list of over 120 materials that the class 38 has handled effectively is included. Secure the bulletin by checking No. 6376 on the coupon and mailing it to Croplife.

MERCHANDISING

(Continued from page 15)

all the dollars spent on all other things become worth less than a cent on the dollar.

When a salesman does the correct things, sells well, represents his store adequately, then and only then, has the money spent on display, layout, advertising, and goodwill been invested well. The efforts of retail selling folks determine how much every other expenditure that their store makes is really worth. There is no substitute for good retail salespeople. They are the representatives of their store.

That salesman can lose not only that sale, but he can act in such a way as to lose that customer. The salesman can make the customer think, "I wish I'd never come in here." The salesman can make the customer think, "Brother, I'll not be caught dead in this place again." Losing the sale would be bad enough, but losing the customer is far worse.

In the final analysis, the salesman is the heart of the selling situation. At the point of sale, he represents all the efforts the store has made to bring the merchandise and the customer together. He is the representative of the store.

Each store owner and manager had best search his soul with a few simple questions. How carefully was that representative of the store selected? How well was he trained? How is he supervised and motivated? How often are his efforts evaluated? How much progress has he shown in the past six months? In the past year?

These are important questions because on the basis of the answers given to them, we can predict the amount of success the store will achieve through their representatives at the point of sale—the heart of retailing.

PLANT PATHOLOGIST NAMED

ST. PAUL—Herbert G. Johnson has been appointed extension plant pathologist in the University of Minnesota Agricultural Extension Service. He succeeds Ray C. Rose, who retired recently and is now on a government mission to Central America. Mr. Johnson has been plant pathologist with the Green Giant Co., Le Sueur, Minn., since Jan. 1, 1953.

Team up your fertilizers with...

Fertilizer Borate high-grade

THE LOW-COST EQUIVALENT OF BORAX FOR AGRICULTURE

MANUFACTURERS! DEALERS!
Borate your fertilizers...
FOR INCREASED SALES AND BETTER CROPS!

Specially developed for the Fertilizer Trade

Here's borax at the lowest cost per unit ... it's FERTILIZER BORATE with higher analysis and lower unit cost. The high boron content of this product is readily available in a form ideally suited to agricultural requirements. You'll blend the FINE MESH with other plant foods for borated fertilizers and offer the COARSE MESH for direct applications.

You save on costs of storage, handling and transportation

FERTILIZER BORATE—High Grade, because of its higher analysis ... and lower moisture content (5 mols) ... saves you important money. In formulating mixtures containing borax, only 82.9 lbs. of FERTILIZER BORATE-High Grade are required for each 100 lbs. of Borax that you guarantee. You figure the savings!

Contains 13.6% BORON
Equivalent to 121% BORAX
44%
Other Borates

COLEMANITE-High Grade...a slowly soluble lime borate for light and porous soils, or in regions of high rainfall. Content of B_2O_3 ranges from 32% to 35%. *Bulletin PF-2.*

POLYBOR-2...Highly soluble. Contains 20.5% Boron or 66% B_2O_3. Applies as a spray or dust; compatible with insecticides and fungicides currently in use and may be applied in the same solutions. *Bulletin PF-4.*

PACIFIC COAST BORAX CO.
DIVISION OF BORAX CONSOLIDATED, LIMITED
630 SHATTO PLACE, LOS ANGELES, CALIF. • 100 PARK AVE., NEW YORK CITY
Write to the office nearest you for information
AUBURN, ALABAMA • 1st National Bank Bldg.
CALGARY, ALTA., CANADA • 2031 40th Ave., S.E.
POCATELLO, IDAHO • P. O. Box 1431
COLUMBIA, MISSOURI • P. O. Box 238
PORTLAND, OREGON • 1505 N.W. Johnson Street
KNOXVILLE, TENN. • 6105 Kaywood Drive
HOUSTON, TEXAS • 1303 Nadley Street
MADISON, WISCONSIN • 1009 Capitol Ave.

Plan Now for Employees' Vacations

Vacations are one of the main spark plugs for producing more sales volume and profits for a farm store. No one would have this system of the annual two-week holiday eliminated, but at times some dealers do wish that the trouble it causes could be erased.

Unless the vacation schedule is carefully planned trouble may develop. Employees will want to make last minute changes and adjusting and re-adjusting take time and lead to worry. Some of the employees will be dissatisfied. And, in general the vacation schedule may be a major management problem.

Here is a seven-point vacation scheduling program that can improve labor relations, make work easier, save a lot of time and produce profit benefits.

Start Scheduling Early

Early planning eliminates the last minute rush and gives plenty of time to iron out any difficulties that may develop. Some dealers neglect this early work, feeling that in the final days of pre-vacation time they can whip the vacation schedule into shape. If this is done, it is often necessary to whip the employees into accepting the program.

If planned early enough, the employees' families can make their plans accordingly. This early planning also provides plenty of time to review and correct the schedule if any complications develop before the final posting. Then, too, employees appreciate the opportunity to make plans early.

Establish A Time Limit

If the vacation period is to run from April through September, this point should be included in the vacation policy. Most dealers find it best to set the time so that vacations do not fall during the heaviest seasons of the year. They select months when sales and activity are at a point.

When it is necessary to have entire crew available during the va tion period, this should be determi early. In some areas special cele tions take place that require a staff to handle the extra busin Mid-year inventory, if taken, m be another time not to sched vacations. If some unusual condit exists in your business, it is wise make plans in advance to av trouble.

If some special rules will ap during the vacation period, it is r ommended by most dealers to these rules up at the time the va tion schedule is posted. One ma question is the time the vacat schedule is to run. Another is pa when and how much. If late retu ing from vacation, how much are employees docked? Even thou these rules are a part of the gene vacation policy, it is advisable to p them again as a refresher.

When your advance planning is a tight schedule, you may find th the late returning vacationer upse the routine. In some organizatio the employees are docked double returning late. This policy will usu ly bring the employees back on tim

Let Employees Select Time

The time factor is the point th can turn dissatisfaction into happ ness about employees' vacations. gives the employees the freedom choice and saves a dealer plen of time and trouble. The notice posted for the vacation period a the general rules that will app Space is provided on the notice f the employees to sign up for t time they prefer.

Some of the employees will pi out the most favored times—tho with long week-ends. If no conflic arise, they are allowed to have t time first selected. Many dealc settle any conflicts on time with t seniority rule. This gives the em ployees the feeling that if they co tinue to work for the dealer, th loyal service will be rewarded.

To be sure that customer service not interrupted by the vacati schedule, you will want to che every selection carefully. The gene vacation rules might well include t rule that not more than one employ from any phase of the operation away at one time. This, coupled w the fact that no two "key" employe can be away at the same time, w provide **good** customer serv throughout vacations.

If it is necessary to employ ext help during the vacation period, c erage is important. It is much eas to hire a good extra employee or semi-permanent basis. For instan it is easier to get a replacem worker for the complete vacati period than it is to have a man a couple of weeks, lay him off for t next two, and then use him ag for two weeks.

Even though the special fav granted may seem unimportant the time, they often have long te implications. Nothing can injure go employee relations faster than feeling that some individual or gro in the firm is being given a pr erence.

Whenever any adjustments made after the employees have lected the time they want their va tion, this should be on a fair equitable basis. Rules, if follow will eliminate almost all misund standings that can develop. Fav itism will do more to wreck a g personnel policy than all the bo and retirement plans or other fri benefits can ever build up in organization.

In the past few years there been a trend to schedule some of

(Continued on page 28)

Successful Farming is a working text for 360,000 Vo-Ag students

Every month a committee of Vo-Ag instructors select the articles in the next issue of SUCCESSFUL FARMING which they think are most useful for their classes. SF editors prepare resumes and references, questions and answers, charts and visual aids. Copies of the magazine are used in the classrooms. This SF Vo-Ag program is now used in some 3812 schools, with some 360,000 students.

In SUCCESSFUL FARMING, you have your best opportunity to sell fertilizers to the farmers of tomorrow . . . as well as to the best farmers today. The Vo-Ag audience is a big plus to the more than 1,300,000 SF subscribers, 85% on-farm.

SF subscribers are volume producers of corn, grains, livestock products. They need fertilizers, and can afford to buy them—average farm cash income around $10,000 for several years. And nothing will sell your fertilizers to them more effectively and more economically than SUCCESSFUL FARMING. Ask any SF office for the full story!

MEREDITH PUBLISHING COMPANY, Des Moines . . . *with offices* in New York, Chicago, Detroit, Philadelphia, Cleveland, Atlanta, San Francisco, and Los Angeles.

Better Selling
Richer Sales Fields for Dealers

t's Time for the Alert Retail Dealer to Start Making Plans For a Demonstration Garden

By AL. P. NELSON
Croplife Special Writer

The time is at hand now, when the ert fertilizer dealer will have to ake an important decision—whether should have a demonstration gar- or not.

Throughout the nation more and ore dealers, especially in the South d in the Midwest, are establishing ell tilled, fertilized and cultivated ardens to show customers that prop- fertilization and good soil fumi- ating and insect control will produce ore luxuriant crops and at a profit. uch a garden, properly cared for and ed for sales purposes, really will elp a dealer sell more merchandise.

Last year on a trip through the outh I talked with a fertilizer deal- who said that a demonstration arden was one of his best and most expensive sales aids. When a cus- mer wanted to know what kind of esticide to use for this or that plant isease, he would walk the customer utside and show him what he used r tomato plants, cabbages or what- ver the case might be. And he had gns all through the garden telling hat analysis fertilizer he had put n the garden.

"That garden elicited more ques- ions from prospects than anything lse I have ever tried," he said. "It gave me a chance to tell about he results we got from our ferti- izer and pesticides. It was a lead- n which made the customer ask o be shown. We didn't have to try o open a field of interest in the ubject through questioning. That s only one advantage of a demon- tration garden."

If the fertilizer dealer sells garden ractors and other equipment, he can se such equipment in caring for the arden. Customers and prospects, see- g the equipment in use, will often op and ask questions and be in- erested enough to buy.

And most certainly the dealer who as such a garden, perhaps only a en or fifteen foot wide strip along- de his building, can have it neatly lacarded with signs, so that farmers nd townspeople will stop and read e advertising messages.

"I have tried this product on our wn garden and find that it does the ob." This is what a dealer can truth- lly say when he has a demonstra- on garden. And said in that way, carries more weight with the pros- ect than if the dealer merely reads irections from a label, valuable ough that label may be. The label formation, plus the dealer's own perience in using the product can ldom be beat as a fine sales pro- otional program.

In planning the demonstration gar- en the dealer may often be limited r space, but even so, he should ar- nge to fertilize some rows and leave eck strips on others. This is to ow prospects the difference in re- lts between fertilized and unferti- ed land. The results are plainly sible when the plants grow.

There is no reason why the aver- e dealer cannot have both sweet rn and vegetables in the small gar- n. Only a half row of fertilized eet corn and a half row of unferti- ed are necessary to show the dif- rence.

If the dealer wishes he can give ay some of the produce from his rden, perhaps to church suppers or ales and thus build considerable od will. He can also advertise the rden in his weekly newspaper ads, rhaps showing a picture of it and

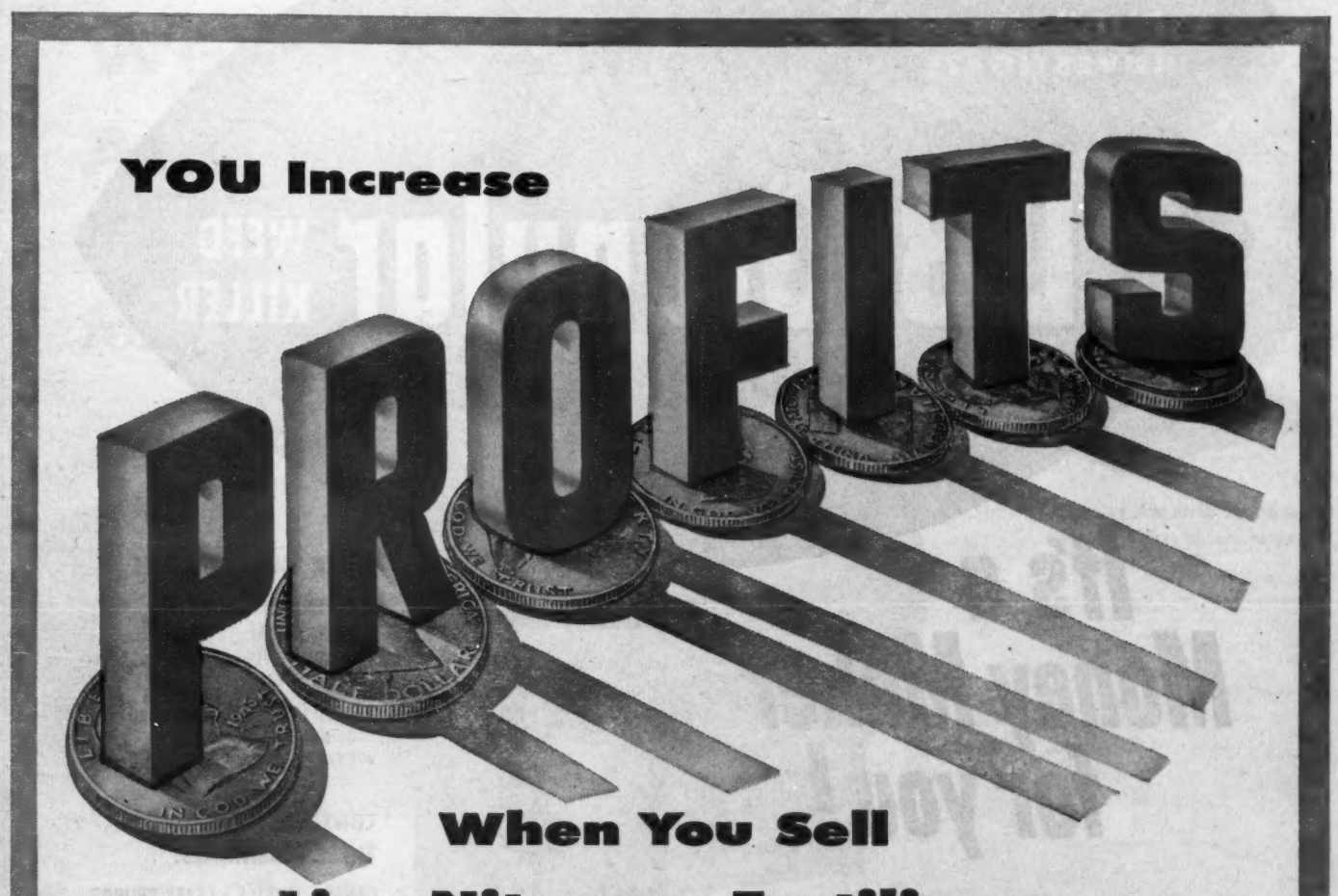
could use a picture of the garden being plowed, perhaps with one of your garden tractors. The placing of the fertilizer and the soil fumigants certainly should be photographed, also the actual seeding.

From then on, you will want some photos of the crop just breaking through the ground, and perhaps six or seven other pictures of growth during the season. These growth pictures will usually show the development due to fertilizer. When you decide to spray any of the crop, then take a picture of the man doing it—perhaps two or three pictures. Get the equipment into the picture as much as possible. These pictures may help you sell more sprayers.

After you have your first pictures of the fertilizing and the plowing, it is also wise to begin posting these pictures with captions on a wall or bulletin board. Then your customers can keep track of the growth of the garden, too, in pictorial form, and they will be just as interested as you, in many instances. You will also be able to use the pictures in your insecticide sales talks, showing how you stopped or cured a certain disease condition through prompt spraying. You can then show a picture of a rejuvenated plant after spraying.

Once the growing season is over, you can mount all those demonstration garden pictures in a photo album, and have each picture illustrated with the proper caption, perhaps typed. Thus during the long fall, winter and early spring months, this album can lie on a display table for any farmer to inspect. It will interest

(Continued on page 26)



When You Sell
Lion Nitrogen Fertilizers
Because The LION Brand Is Pre-Sold

HERE'S THE LION LINE-UP OF QUALITY NITROGEN FERTILIZER MATERIALS

Lion Anhydrous Ammonia—82.2% nitrogen. Quality guaranteed.

Lion Aqua Ammonia—Ammonia content about 30%—other grades to suit your requirements.

Lion Ammonium Nitrate Fertilizer—Improved spherical pellets. Guaranteed 33.5% nitrogen.

Lion Nitrogen Fertilizer Solutions—Various types to suit your particular manufacturing needs.

Lion Sulphate of Ammonia—White, uniform, free flowing crystals. Guaranteed 21% nitrogen.

Retailers who market Lion nitrogen fertilizers are enjoying sales increases and expanding profits, because the Lion brand is being continuously *pre-sold* to farmers—and retailers reap the benefits.

Throughout the year, Lion advertising appears in leading state farm publications, and in Farm & Ranch-Southern Agriculturist, Prairie Farmer, Progressive Farmer, and Wallaces' Farmer & Iowa Homestead. These advertisements tell farmers—again and again—the *facts* about plant foods: that the farmer who uses the proper kinds and amounts of commercial fertilizers will increase his yields and his profits. This advertising sells fertilizers, for Lion and for *you!*

Lion's two giant chemical plants have the capacity to assure you a steady supply of the most popular and economical types of nitrogen fertilizers. In fact, Lion is the world's largest manufacturer of prilled ammonium nitrate, and one of the industry's leaders in producing other nitrogen fertilizer materials.

It's easy to sell nitrogen fertilizers with the Lion emblem on the bag, or Lion's anhydrous ammonia. And easier selling adds up to *more profits for you.*

DISTRICT SALES OFFICES: LION OIL BUILDING, El Dorado, Ark. • INSURANCE EXCHANGE BUILDING, Des Moines, Ia. NATIONAL BANK OF COMMERCE BUILDING, New Orleans, La. • 1401 BUILDING, Atlanta, Ga.

LION OIL COMPANY
A DIVISON OF MONSANTO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Customers Find Well-Rounded Program Of Services at Iowa Farm Supply Store

A diversity of farm chemical services is offered customers by Laverty Seed Farms, Indianola, Iowa, which is operated by Charles Laverty about a mile south of this community.

Mr. Laverty has been selling fertilizer since 1946 and also raises and sells some soybeans and oats. During the past year he has established an anhydrous ammonia storage depot on a railroad siding about a mile north of his farm. The lettering on the side of the large tank reads "Laverty Seed Farms . . . Agricultural chemicals, Seeds, Fertilizer." The customer who inquires farther finds that this firm indeed has many services which can be utilized on the average farm.

For example, Mr. Laverty not only sells anhydrous ammonia, but he also sells dry fertilizer. During the past year he has purchased a truck for the hauling and spreading of bulk fertilizer. The capacity of the truck is five tons.

Most of the bulk spreading done this past year by the company has been between 150 and 200 lb. per acre.

The firm employs one salesman who is kept busy most months of the year visiting farmers and helping them with getting soil samples, working out crop and fertilizer arrangements, etc. Farmers appreciate this type of service, and it ables the Laverty firm to b many fertilizer orders in adva of the season.

In addition to selling and spr ing fertilizer, this firm also do great deal of spraying. The s program is largely a spring and s mer program. In charge of spra operations is Hap. G. Miller, c of a local college in Indianola. likes this off season activity and h college students for the work trains them in it.

The Laverty company has spray rigs and these are used f variety of spraying jobs. In the place the firm sprays farm fields corn borers, grasshoppers and o pests. The crews will also spray t brush, barns, henhouses and o farm buildings.

In this area some of the coun do not have their own spraying and they hire Laverty crews to roadside spraying. Telegraph telephone companies also cal Laverty services for special spra jobs.

This spray service has been ope ing for several years, and farm and others usually place their or well in advance. This makes it sible for Mr. Laverty and Mr. M to set up spray schedules so a eliminate extra labor and wa time.

Mr. Miller trains the college dents in handling the spray out

A natural extension of this spra ing service is aerial work. Duri the past year the firm has done foliation spraying in Michig with clients furnishing the che cals. The states in which the fi has done such aerial spraying clude Nebraska, Arkansas, W consin, Michigan and Iowa. Fo airplanes are used for this wor

During spring and summer w fertilizers moving fast and spray jobs coming in rapidly, the Lave farm is a scene of busy action. roomy farmyard is usually full equipment, while orders are funne and scheduled through an office s arate from the house.

While the area in which the f sells fertilizer is limited, the sp crews travel considerable distan and the airplane spraying, of cou covers many states. Mr. Laverty f that the selling of fertilizer and spray service tie in very well gether, assisting the farmer in ting two vital services from the s company.

GARDEN PLANS

(Continued from page 25)

many farmers and may well be turning point in a farmer's deci whether to do likewise with his s lar crops the following year.

Not every business man w resells products has an opportun to demonstrate these products does the farm chemicals dea through a demonstration gard Many business men wish that th had such demonstration opportu ties, and so it can be seen that t farm chemicals dealer has a na ral sales promotion idea just wa ing for him to take advantage of

The well planned and cared demonstration garden can also s as a school for the rest of your ployees. You can take them ou that demonstration garden at portune times and teach them a g deal about fertilization, plant c insect control, etc., better than can from a book or a chart. Thus will be able to train them to bec better salesmen for you. The res will show up in your cash registe

Dealers—
Distributors—
INVESTIGATE

—the New

DB* Granular WEED KILLER

that destroys deep-rooted perennial weeds!

*Trade-mark of B.C.L.

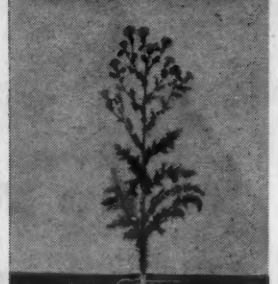
It's a Money Maker for you!

Here's a weed killer every farmer will want! Be ready for the demand! Now you can offer 2,4-D made doubly effective, longer-lasting, because fortified with borates. DB Granular is always ready to use... anytime, anywhere ...for it is applied DRY! It does *not* need to be mixed with water and applied as a spray. "DB" is powerful! As little as 1 lb. per 100 sq. ft. is effective. Watch for "DB" farm paper advertising in your area.

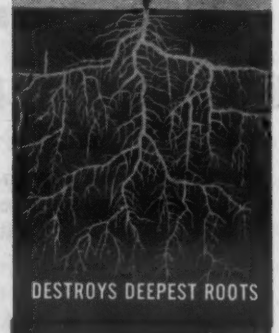
SERVICE BULLETINS, FOLDERS, AD MATS FOR YOU
Be prepared to answer questions about DB Granular. Get your supply of promotional literature at once for new business. Let customers know you've got a supply of this latest herbicide... and start selling!

SPECIAL NEW SPREADER FOR "DB," NOW AVAILABLE
The PCB Spreader was designed for most efficiently applying "DB' at the very low rates prescribed; is also suitable for seeding. Adjustable to rates as low as ½-lb. per 100 sq. ft. Weighs a mere 6 lbs. Holds 25 lbs. of "DB." Retails at only $10.75.

APPLIES DRY...
NOTHING TO MIX...
NO WATER TO HAUL...



DESTROYS DEEPEST ROOTS



CHECK THESE FEATURES:
- DEPENDABLE IN ACTION
- ECONOMICAL... CONVENIENT
- READY TO USE... DRY!
- SAFE... NONFLAMMABLE
- NONPOISONOUS when used as directed
- STANDARD PACKAGE—50 lbs.

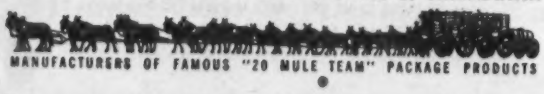
CONTROLS THESE PERENNIALS:
CANADA THISTLE • LEAFY SPURGE
TOADFLAX • RUSSIAN KNAPWEED
WHITETOP • BINDWEED (Morning Glory)
and many other perennial or annual herbaceous weeds on non-cropped agricultural land.

Contains 2,4-D yet it is applied DRY!

DB* GRANULAR

INQUIRIES INVITED

AGRICULTURAL SALES DIVISION
PACIFIC COAST BORAX CO.
DIVISION OF BORAX CONSOLIDATED, LIMITED
630 SO. SHATTO PLACE • LOS ANGELES 5, CALIFORNIA



MANUFACTURERS OF FAMOUS "20 MULE TEAM" PACKAGE PRODUCTS

OTHER WEED KILLERS (Monosodium)

FERTILIZER SUPPLEMENTS

CONCENTRATED BORASCU®
POLYBOR®-CHLORATE
UREABOR*
*Trade-mark of B.C.L.

FERTILIZER BORATES
POLYBOR®-2
RASORITE* Anhydrous
*Trade-mark of B.C.L.

CONVENIENTLY LOCATED WAREHOUSE DISTRIBUTION STOCKS FOR DEALERS

Wisconsin Department of Agriculture Lists Most Troublesome Insect Pests

MADISON, WIS.—The Wisconsin Department of Agriculture has just published a list of fifteen insects that presented the most important control problems during the past season of 1955.

Based on a number of considerations, the department evaluated the importance of the various pests on the estimated percent loss of total value of crops; cost of protection against losses or increased production costs; and nuisances or nuisance elimination costs.

The fifteen pests were named as follows:

1. Grasshoppers: Melanoplus femur-rubrum (Deg.) and other species caused an estimated loss of 5½ million dollars in Wisconsin in 1955. Over 1 million of the 4 million acres of hay was infested. There was a constant threat and some damage to tobacco, corn, pastures and other Wisconsin crops.

2. Forest Tent Caterpillar: Malcosoma disstria Hbn. infested about 1 million acres of timberland in northwestern Wisconsin. It and its parasite, Sarcophaga aldrichi Park, caused losses in the tourist trade.

3. European Corn Borer: Pyrausta nubilalis (Hbn.) infested 53% of the corn stalks in Wisconsin and there was an average of 82 borers per 100 plants which caused considerable breaking over before harvest and also caused many ears to drop to the ground. This pest was also troublesome to canners who made expenditures for its control.

4. Potato Leafhopper group: Empoasca fabae (Harr.) and others infested potatoes and alfalfa generally in 1955. In addition, a large portion of the cost of protecting potatoes by a regular spray program may be charged to this group.

5. Pea Aphid: Macrosiphum pisi (Kltb.) generally infested Wisconsin canning peas. Losses, including the cost of applying chemicals to protect this important crop, ran high.

6. Dairy Flies and Mosquitoes: The house fly, Musca domestica L., the stable fly, Stomoxys calcitrans (L.), horse and deer flies of the tabanid group and mosquitoes of the Aedes group caused losses to Wisconsin farmers who also spent large amounts for chemicals to prevent greater losses. In addition, the urban importance of these pests was great and different Wisconsin municipalities spent varying amounts in order to cope with them.

7. Apple Maggot: Rhagoletis pomonella (Walsh) was a particularly troublesome insect pest on apples and caused heavy losses. Large sums were spent for its control by Wisconsin orchardists.

8. Stored Grain Pests: "Bran bugs" including the confused flour beetle, Tribolium confusium Duv., the sawtoothed grain beetle, Oryzaephilus surinamensis (L.) and others, together with the flour moths, were responsible for the major portion of the losses caused by insects on stored Wisconsin grain. Many granaries were heavily infested. Some of these were treated.

9. Plant Bugs: The tarnished plant bug, Lygus oblineatus (Say), the alfalfa plant bug, Adelphocoris lineolatus (Goeze) and the rapid plant bug, Adelphocoris rapidus (Say) and others generally infested Wisconsin's large acreage of alfalfa. In addition, these pests reduced the quality and quantity of the strawberry crop. Ornamental plants, also, were affected.

10. Fabric-eating and other household insect pests: The amount of money spent to control the casemak-

ing clothes moth, Tinea pellionella (L.) and others by mothproofing fabrics was great. Carpet beetles and silverfish were present in greater numbers than for several years past. Most spectacular of the household insects was the brown-banded roach, Supella supellectilium (Serv.) which extended the area it infests in Wisconsin.

11. Grain Aphids: The English grain aphid, Macrosiphum granarium (Kby.) and others caused losses and treatment throughout Wisconsin oat and barley fields during the latter part of May and the first part of June. Besides the feeding losses caused by these aphids, virus diseases were spread by them in the small grains.

12. Meadow spittlebug: Philaenus leucophthalmus (L.) heavily infested a large portion of Wisconsin's alfalfa acreage. Strawberries were also infested in the southern and eastern portions of the state.

13. Cabbage looper: Trichoplusia ni (Hbn.) caused a 20 to 25% loss in Wisconsin's cabbage production or an estimated loss of $500,000.

14. Potato flea beetle: Epitrix cucumeris (Harr.) infested 50% of Wisconsin's potato acreage. In addition to the loss by the insect's damage, the prorated cost of chemical insect control on potatoes would run high for the potato flea beetle.

15. Corn earworm: Heliothis armigera (Hbn.) generally infested both sweet corn and field corn.

Specialist Urges More Fertilizer Use

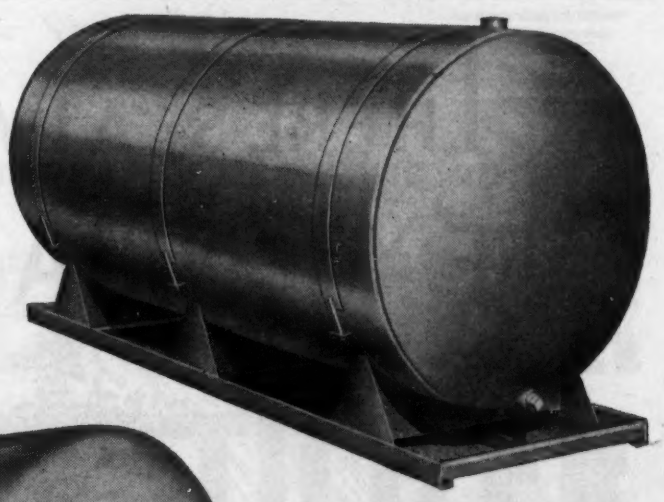
LIBERTY, MO. — Increased use of fertilizers and improved methods of crop selection and harvest were stressed as factors in lowering farm production costs by John Falloon, extension soils specialist of the University of Missouri, to an audience of more than 200 at the Leon Miller farm, near here recently.

Mr. Falloon addressed the thirtieth annual Clay County soils and crops conference.

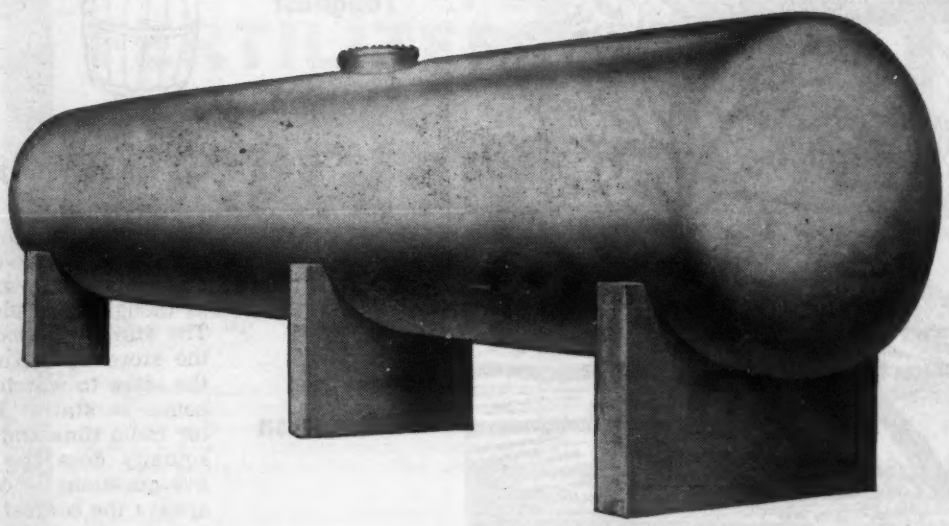
He listed these points in the usage of fertilizer—increased soil testing, the decision to make long- or short-range improvements and extensive use of legumes and manure.

He urged that Clay County should have more alfalfa acreage.

Welded Aluminum—
best tank for liquid nitrogen



3 sizes of skid tanks for transport. 5 sizes of farm tanks.



Bulk storage in 12,000 and 22,000-gal. capacities.

BUTLER *best source for aluminum tanks... all popular sizes!*

Not just any aluminum tanks—they're Butler! Get top quality low-pressure tanks—built and tested by Butler tank specialists—guaranteed by Butler. Each tank is engineered with superior strength in stress areas. And Butler supplies the sizes of low-pressure tanks your business needs. Bulk storage tanks in 12,000 and 22,000-gal. sizes. Skid tanks for transport in 500, 830, and 1000-gal. sizes. Rugged detachable skids have rubber lined straps to protect metal. Farm storage tanks are available in 100, 270, 500, 830, and 1000-gallon sizes. Mail coupon to Butler now for complete information.

BUTLER STEEL PRODUCTS

Manufacturers of Oil Equipment
Steel Buildings • Farm Equipment
Dry Cleaners Equipment • Special Products

Factories at Kansas City, Mo. • Minneapolis, Minn.
Galesburg, Ill. • Richmond, Calif.
Birmingham, Ala. • Houston, Tex.

For prompt reply address office nearest you:
BUTLER MANUFACTURING COMPANY
7396 East 13th Street, Kansas City 26, Missouri
996A Sixth Avenue S.E., Minneapolis 14, Minnesota
1014 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 96A, Richmond, California

Send me more information on the following sizes of Butler low-pressure aluminum tanks.

Name.....
Firm.....
Address.....
City..... Zone..... State.....

EMPLOYEE VACATIONS

(Continued from page 24)

vacations during the winter months. This helps ease the drain of help during the summer months, and it gives the employees an opportunity for a vacation at a different time of year.

One dealer reported that by offering the regular two weeks vacation period during the slow months and giving the employees the opportunity to take extra time at no pay, the employees eagerly sought these dates. Two of the employees took off a full month and came back full of enthusiasm for the job.

It is hard to keep an employee away from his type of business. But, if he is far enough away from his own store, he will visit other stores and see how they are handling problems. This chance for development of new ideas is helpful for increasing interest and efficiency when the employees return from their vacations.

Gripes and complaints about the vacation schedule can be cut to a minimum by planning vacation schedules in advance, giving the employees a voice at the time for their own vacation and settling all disputes or conflicts in a fair and equitable manner.

WINTER WHEAT SEEDINGS

WASHINGTON — Total winter wheat seedings for all purposes in the fall of 1955 were 45,203,000 acres while indicated allotments are 40,602,225 acres. This indicates the acreage seeded is 111% of allotments.

All crops need nitrogen. When they do . . .

SELL HORSE & LION NITROGEN FERTILIZERS

Small consolation when this year's crops bring your customers small revenue. It will surely reflect in their ability to buy fertilizer next year—and affect their choice of dealer. Sell them "Horse & Lion" nitrogens—*proven producers* of greater yield and better quality, and the higher revenue volume and top quality always earn.

5 "Horse & Lion" Nitrogen Fertilizers for various requirements are:

"Horse & Lion" Calcium Nitrate: 15½% pure nitrogen, combined with about 20% available lime. Granulated.

"Horse & Lion" C.A.N. (Ammonium Nitrate Limestone): 20½% pure nitrogen (10¼% nitric and 10¼% ammonic nitrogen) and approximately 32 to 33% calcium carbonate. Granulated.

"Horse & Lion" Ammonium Sulphate Nitrate: 26% pure nitrogen (11% nitric and 15% ammonic nitrogen). Granulated.

"Horse & Lion Urea 44": 44% pure nitrogen. Coated pellets for dry use.

"Horse & Lion Urea 46": 46% pure nitrogen. Pellets without coating for liquid application or dry use where fast dissolving is desired.

For complete information and prices, contact your nearest "HORSE & LION" fertilizer headquarters.

ATKINS, KROLL & Co.

ESTABLISHED 1906
DISTRIBUTORS, U. S. A.
500 FIFTH AVENUE, NEW YORK 36, N. Y.
417 MONTGOMERY STREET, SAN FRANCISCO 4, CALIFORNIA
417 SOUTH HILL STREET, LOS ANGELES 13, CALIFORNIA
421 S. W. SIXTH AVENUE, PORTLAND 4, OREGON

RINGING THE cash register

Merchandising Hints for The Retailer

Photo Board

Advertisements of the Granite Feed & Hardware, Sal Lake City, invite customers to bring to the store a snap shot of themselves or their families for placing on centrally-located "photo board." Above the board hang a caption reading, "Meet Our Customers." Each phot brought in is placed on the board for one week an customers who bring them in receive a "thank you certificate worth $1 towards any feed transaction of $1 or more. The firm is convinced that the practice ha been a valuable business stimulant.

First Years Toughest

The biggest reason for business failure is lack of ex perience on the part of management, according to A Potter, executive manager of the Chicago Association of Credit Men. Nearly all failures occur in the first five years a firm is in business, he states. Business failures, listed according to type, are led by food and liquor stores, followed by eating and drinking places, apparel and accessories, furniture and home furnishings, automobile firms, lumber, building materials and hardware. Business mortality, however, is presently far below the average of the failure rate just prior to World War II.

Best Promotion

The best promotion we ever tried, one retailer says, is a silver dollar give-away stunt, based on a radio quiz. It has the whole town talking about our silver dollars—just as though we made them ourselves, this merchant states. The stunt is based on a radio quiz by direct wire from the store at 5 p.m. every Saturday. Large crowds jam the store to watch the program and many more listen at home, he states. The 10-minute program costs $65—$15 for radio time and $50 for prize money. The radio station actually does the work. Each contestant must answer five questions in order to win the entire $50, and nearly always the contestant gets the entire $50. Constant newspaper and radio promotion of the stunt is carried on and the appearance of silver dollars in the city has meant considerable "word of mouth" advertising for the store, the owner comments.

Wrapping Service

A gift wrapping service is provided by one feed dealer who hires a high school girl to wrap presents from 3 p.m. to 6 p.m. daily for several weeks prior to Christmas. A 10¢ charge is made for each package but for purchases of $7.50 or over six parcels are wrapped without charge.

Pet Sales Peeves

What sales techniques antagonize customers? Du Pont sales instructors recently asked eight persons who contact salesmen, both in the office and at retail level, to list their "pet peeves" against salesmen. Here are the types of salesmen named as making the most antagonistic impressions: The door jammer tries to break down sales resistence by overpowering the prospect and cannot understand a simple "No." The conspirator says, "For you only, my last one, very rare," pulling the item from under the counter, even though it can be purchased at many other stores. The name dropper embellishes his sales talk with frequent mention of prominent persons. The night owl salesman asks to come to the house for a few minutes and stays for hours. The haughty, self-important salesman figures he does the customer a favor by waiting on him and is clearly bored. The upgrader is always trying to sell something which costs more or is not the item asked for. The vanishing American, the salesman who is "all over" the customer when he's "just looking" but disappears when he's ready to make a purchase. The "cozy kid" salesman says, "This is just what you need," or "On you it looks good" and has an overfamiliar approach which many customers find offensive.

One Acre in Six Is Treated From Air, U.S. Report States

WASHINGTON—One acre out of every six in the U.S. was dusted, sprayed, fertilized or seeded last year by aircraft, according to a report released recently by the U.S. Weather Bureau.

Agricultural aviation, the report states, is now the third largest segment of the aviation industry in dollar volume of business. There is a fleet of 7,000 aircraft in the agricultural aviation industry, and the total time flown last year was equivalent to 33% of the number of hours flown by civil airlines. The report further points out that aerial pest control, weed control and fertilizing add an estimated $3 billion to the annual farm income and that crop-control work from the air is done on more than 200 types of crops in every state.

Not Enough Fertilizer Used in Mid-South, Agronomist Says

JACKSON, MISS.—"There is not enough fertilizer being used per acre on the average over the Mid-South."

This is the statement of W. R. Thompson, Mississippi Extension agronomist, in advising farmers to make plans to use fertilizer under all crops."

Mr. Thompson said many farmers use what the experiment stations recommend, but that many others do not use any fertilizer at all under some of their crops.

"We were working with a group of agricultural workers and farm leaders recently and asked the farmers what was the average amount of fertilizer used, taking the county as a whole," Mr. Thompson said. "Their estimate was 200 lb. of mixed fertilizer per acre on their main crops and none on most of the minor crops and pasture land.

"I noticed everything got mighty still when this statement was made. When the county fertilizer usage was analyzed, it was found the farmers were right. Farmers in that county were using less than half the recommended amount of fertilizer per acre."

Mr. Thompson pointed out that experiment stations have "given us the average fertilizer recommendations for average soil on all crops."

"I would like for you to make plans to use fertilizer under all crops," he said.

"There is great agitation to use the soil as a bank for future needs of soil fertility," he continued. "One good way to bank fertility in the soil is by not abusing it by letting soil erosion take part of it off and by failing to fertilize crops enough so they will grow a cover which will protect the soil."

Fertilizer is needed for all crops, Mr. Thompson said.

"Just because a crop is being grown for feed rather than cash sale is no valid reason for non fertilization," he stated. "Farmers cannot afford the cost of seed and labor to grow an unfertilized crop of corn."

For an average corn yield of 50 bu. to the acre fertilizer requirements are around 500 lb. of mixed fertilizer and 40 to 60 lb. of nitrogen, depending on how good the soil is.

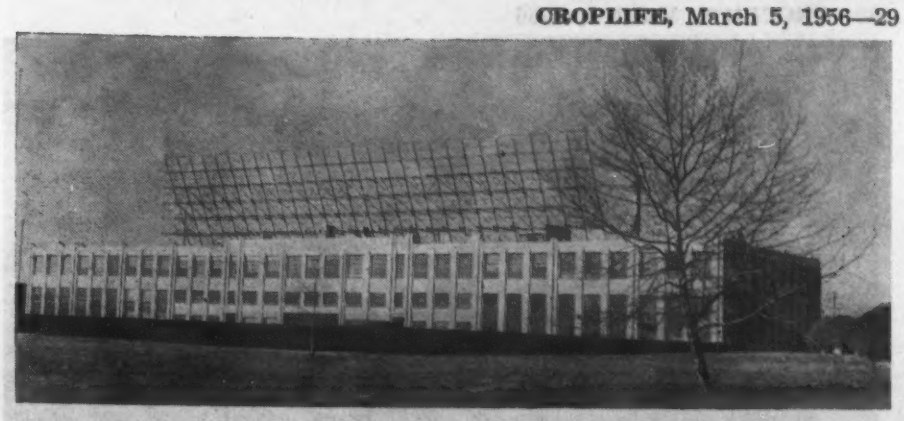
Without fertilizer, the average corn yield on most Mississippi hill land is 10 to 15 bu. an acre, he stated. "Most farmers will not try to produce a cotton crop without fertilizer for they know that without fertilizer the average yield of lint cotton an acre would be around 200 lb. This is uneconomical."

Flood Damage May Cut Down on Sales

SACRAMENTO—A curtailed market for agricultural chemicals in Sutter County, California, the "peach bowl of the nation," is foreseen as a result of flood damage occurring in December and January.

Ralph B. Bunje, manager of the California Canning Peach Assn., in a preliminary report on damage occurring south of Yuba City, said it does not appear that an accurate survey of the damage can be made until early in July.

"We are advised," he said, "that the effect of water on the orchards will vary. A number of factors will have a bearing on the final results. These include type of soil, root stock, health of trees, underground water table, period of dormancy, atmospheric temperatures, amount of silt, sand or debris and length of time the orchard has been under water."



LUMMUS DEVELOPMENT CENTER—The Lummus Co., designing engineers and constructors for the petroleum and chemical industries, located at 385 Madison Ave., New York 17, N.Y., will establish early in 1956 an engineering development center in Newark, N.J., it has been announced by J. F. Thornton, Lummus president. For this purpose, Lummus has purchased a 150,000 sq. ft. building (shown above) on a ten and one half acre plot near the Newark Airport. Lummus, which has had similar facilities in Bayonne, N.J., for the past 25 years, will use the new building primarily for pilot plant operation and process development work carried out in conjunction with its clients. Among current projects of the firm is an ammonia plant for St. Paul Ammonia Products, Inc., at Pine Bend, Minn.

KILL
SOIL INSECTS
with
FERTILIZER
containing
HEPTACHLOR
HEPTACHLOR IN FERTILIZER . . .
• the easy way to protect your crops against soil insects
• apply it with your regular equipment
• saves 50% on labor, tractor hours, and fuel . . . does two jobs in one
Fertilizer containing Heptachlor gives you extra benefits. Heptachlor kills crop-damaging soil insects . . . prevents damage to seeds, seedlings, and roots. Heptachlor protected crops make the best use of fertilizer and moisture. This spring do two important jobs in one by using fertilizer containing Heptachlor.
Applied alone, or mixed with fertilizer, Heptachlor is . . .
EFFECTIVE . . . . . From seed to harvest Heptachlor kills insects that damage and destroy seeds, young plants and growing roots. Heptachlor is sure-death to soil insects and gives you full season protection.
ECONOMICAL . . . . . Low cost added crop insurance . . . a few dollars is all it costs to treat an acre with Heptachlor. It more than pays in better yields. On test plots Heptachlor treatment doubled the corn yield . . . over 50 bushels more corn per acre than from untreated plots. Other crops show similar benefits.
EASY TO USE . . . . . Handle the Heptachlor-fertilizer mixture as you would any straight fertilizer application and work it into the soil. It doesn't harm equipment and it's safe to handle.
This year, for better crops use fertilizer containing Heptachlor. Whether you buy fertilizer in bulk or by the bag, insist on fertilizer with Heptachlor . . . it's America's leading soil insecticide . . . it takes the soil insect risk out of farming.
HEPTACHLOR KILLS MORE SOIL INSECTS THAN ANY OTHER RECOMMENDED INSECTICIDE . . .
Corn Rootworms
Cutworms
Wireworms
Seed Corn Maggot
Seed Corn Beetle
White Grubs
White Fringed Beetle
Ataxia Beetle
Ants
European Chafer
False Wireworms
Flea Beetle
Grape Colaspis
Green June Beetle
Larvae
Japanese Beetle
Kafir Ant
Mole Crickets
Root Maggot
Root Weevil
Sweet Clover Weevil
Sweet Potato Weevil
Velsicol Chemical Corporation
330 East Grand Avenue
Chicago 11, Illinois
WF 26-2
Please send me the pamphlet telling me about Heptachlor-Fertilizer mixtures and how they can pay on my farm; also a free copy of the new 12 page soil insects booklet.
Name
R.F.D.
City
State
Advertisement now appearing in farm publications
VELSICOL

Farmers are reading about

HEPTACHLOR -FERTILIZER Mixtures

Be ready to meet the growing demand—order your Heptachlor-Fertilizer mixtures NOW!

Over a million farmers are regularly reading about Heptachlor-Fertilizer mixtures in farm magazines and state farm papers. And many thousands more will be hearing the Heptachlor-with-Fertilizer facts on leading farm radio stations.

More farmers will buy Heptachlor for protection against soil insects this spring than ever before. They'll ask for Heptachlor mixed with Fertilizer. For greater sales, take advantage of the coming demand for this more effective combination—order your Heptachlor-Fertilizer mixtures now. *Insist* on HEPTACHLOR, America's Leading Soil Insecticide . . . you'll profit through greater sales and customer satisfaction.

HEPTACHLOR IS AMERICA'S LEADING SOIL INSECTICIDE!

Here's an easy-to-read leaflet . . . It gives farmers all the facts on Heptachlor-Fertilizer mixtures. Order a supply now. Tell your customers you will be offering this yield building combination.

Velsicol Chemical Corporation C-36
330 East Grand Avenue
Chicago 11, Illinois

Please send me_____copies of the new Heptachlor-Fertilizer folder.

NAME_____

COMPANY_____

STREET AND NUMBER_____

CITY_____ ZONE____ STATE_____

HONORARY DEGREE—Samuel L. Nevins, vice president of Olin Mathieson Chemical Corp., Little Rock, recently received an honorary doctor of laws degree from the University of Arkansas. At the same mid-term convocation his daughter, Merry Helen, and his son-in-law, Harold Hodges, III, also received degrees.

University of Arkansas Awards S. L. Nevins Honorary Degree

FAYETTEVILLE, ARK. — In recognition of his achievements in chemical research and as an industrialist, Samuel L. Nevins, vice president of Olin Mathieson Chemical Corp., was awarded an honorary doctor of laws degree at the mid-term convocation of the University of Arkansas. Mr. Nevins is responsible for the corporation's Plant Food Division, with headquarters at Little Rock.

The citation read by John T. Caldwell, university president, was as follows:

"Samuel L. Nevins, scientist, industrialist, valued citizen of Arkansas:

"Your life is one of creative action. The breadth of your vision and the fruits of your labor have contributed much to the welfare of your adopted state of Arkansas, and indeed to the welfare of agriculture and of industry throughout Arkansas.

"Native of our neighboring state of Missouri, you received your degree in chemical engineering from the University of Missouri. After working for a time with Monsanto Chemical Co. and then with the Southern Acid and Sulphur Co., you moved to Arkansas in 1921 as general manager of the Arkansas Fertilizer Co. When it became part of the Olin Mathieson Chemical Corp., you continued your work for that company, advancing to the office of vice president for the Plant Food Division.

"Two achievements of your busy career stand out as especially noteworthy. You worked out the first process for recovering elementary sulphur from the sour gases of the oil wells of South Arkansas, a development which led to great industrial expansion; and you pioneered in the development of high analysis pelletized fertilizer, a plant food development which means much to agricultural progress in this state.

"In time of need you have given generously of your scientific knowledge in the interest of your country's security and welfare, and you have exemplified in your personal life the traits of fine character and good citizenship.

"For your contribution as a scientist, as an industrialist, and as a citizen, the University of Arkansas honors you.

"Therefore, by virtue of the powers vested in me, and upon recommendation of the University Council and the Board of Trustees, I confer upon you the degree of doctor of laws, honor's causa, and admit you to all rights and privileges appertaining thereto."

State Action Against Spotted Alfalfa Aphid Asked in California

SACRAMENTO — Goodwin J. Knight, California governor, has received from Wallace D. Henderson, Fresno assemblyman, a request that the spotted alfalfa aphid problem be added to the agenda for the special legislative session in March.

Mr. Henderson informed the governor that the pest cannot be controlled effectively this spring without special state legislation which will allow the blanket application of insecticides over the entire state.

The assemblyman predicted that the aphid will cause $12 million damage to the state's alfalfa crop this year unless it is controlled.

Dr. Ray Smith, University of California entomologist, has emphasized the need for farmers to police their own fields every two or three days this spring. He advocates parting the plants and looking for the telltale signs of honeydew on the lower stalks, leaves and ground.

Upon discovery of the pest, Dr. Smith said, the field should be thoroughly sprayed with a spray rig.

AT ORIENTATION CONFERENC —Louis R. Moretti, right, secretar treasurer of United-Heckathorn, 6 S. 4th St., Richmond, Cal., and pre dent of Industrial Minerals and Che ical Co., Berkeley, Cal., says far well to Maj. Gen. Joseph H. Harpe Mr. Moretti was among U.S. busine and professional men who were Fort Benning for the Army phase the Defense Department's Joint Civi ian Orientation Conference. Member of the conference visited Army, Navy Marine Corps and Air Force installa tions to see how the tax dollar used for national defense. Followin this conference, Mr. Moretti was in vited to the Defense Orientation Con ference Assn. where he was electe to the board of directors.

Georgia Group Asks Cotton Allotment Freeze

MACON, GA.—The Georgia Cro Improvement Assn. has adopted resolution calling for a freeze in th national cotton allotment at the 195 acreage figures.

The resolution was approved by th board of directors at the group's an nual meeting and is being forwarde to both senators from Georgia and al the members of the Georgia delega tion in the House of Representatives.

Adoption of the resolution cam after a cotton commodity study re ported a continuation of the presen system of allocations would forc "Georgia as well as other southeast ern states to lose acreage out of pro portion to other cotton-producing areas."

SUGGESTED MINIMUM FERTILIZER GRADE NEEDS OF THE MIDWEST STATES

RATIO	ILL	IND.	IOWA	KAN.	KY.	MICH.	MINN.	MO.	NEBR.	N. DAK.	OHIO	S.DAK.	WISC.
0:1:3	0-10-30	0-10-30	0-10-30			0-10-30	0-10-30	0-10-30			0-10-30		0-10-30
0:1:2	0-10-20	0-10-20			0-10-20	0-10-20							
0:1:1	0-20-20	0-20-20	0-20-20	0-20-20	0-12-12	0-20-20	0-20-20	0-20-20			0-20-20		0-20-20
0:2:1	0-20-10	0-20-10	0-20-10		0-16-8	0-20-10	0-20-10			0-20-10	0-20-10		0-20-10
1:6:3						4-24-12		4-24-12		4-24-12			
1:4:4	4-16-16	4-16-16	5-20-20		3-12-12	4-16-16	5-20-20	5-20-20			4-16-16		5-20-20
1:4:2	5-20-10	5-20-10	5-20-10			5-20-10	5-20-10				4-16-8		
1:4:1						5-20-5							
1:3:9	3-9-27	3-9-27				3-9-27		3-9-27					3-9-27
1:3:6		3-9-18	3-9-18			3-9-18	3-9-18				3-9-18		3-9-18
1:3:2					4-12-8								
1:3:1								8-24-8					
1:2:3					5-10-15						5-10-15		
1:2:2		8-16-16	8-16-16		5-10-10	8-16-16	8-16-16	8-16-16			6-12-12		8-16-16
1:2:1			10-20-10	10-20-10		10-20-10	10-20-10	12-24-12	10-20-10	10-20-10		10-20-10	
1:1:3					6-6-18								
1:1:1	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10
1:8:0		5-40-0											
1:4:0	8-32-0	8-32-0	8-32-0	8-32-0		8-32-0	8-32-0	8-32-0	8-32-0	8-32-0		8-32-0	
1:2:0	10-20-0		10-20-0	10-20-0		10-20-0	10-20-0	10-20-0	10-20-0	10-20-0		10-20-0	
1:1:0	15-15-0		15-15-0	15-15-0			15-15-0		15-15-0	15-15-0		15-15-0	
2:1:1		14-7-7				14-7-7					14-7-7		
2:2:1										12:12:6			

FERTILIZER RECOMMENDATIONS—The above table, showing suggested minimum fertilizer grades for Midwest states was released at the recent agronomist-fertilizer industry meeting in Chicago, sponsored by the Middle West Soil Improvement Committee. The recommendations are by state agronomists, who also noted that straight materials supplying nitrogen, phosphate and potash are also needed. Minor and secondary elements as materials and in mixed fertilizers are required in local areas, they pointed out. The also said that production of higher grades of the suggested ratios is encou aged. The following changes in grades and ratios have been suggested f future consideration: 1-3-6 (3-9-18) to 1-2-4 (5-10-20); 1-3-9 (3-9-27) to 1-2 (4-8-32); 0-1-3 (0-10-30) to 0-1-4 (0-10-40), and 1-2-3 (5-10-15) to 1-2 (5-10-20).

"Driest year since 1937 but USS Ammonium Sulfate brought an 82 bushel corn yield!"
USS Ammonium Sulfate
UNITED STATES STEEL
USS Ammonium Sulfate
UNITED STATES STEEL

Here's a Double-barrelled blast

to help you sell more USS Ammonium Sulfate

THIS MONTH, United States Steel is doubling up on ads in the following farm papers: *Michigan Farmer, Ohio Farmer, Pennsylvania Farmer, Prairie Farmer* and *Wisconsin Agriculturist.* This double dose of advertising comes just prior to corn plow-down time.

Both of these ads are excellent testimonials that stress the importance of nitrogen for profitable corn yields. They point out that whether it's used straight or in mixes, USS Ammonium Sulfate supplies nitrogen in non-leaching ammonia form—making it safe to apply, even while the ground is frozen, without losing nitrogen through leaching. The ads also show how practical it is to buy and spread USS Ammonium Sulfate in bulk form.

It will certainly pay you to tie-in with this double-barrelled sales campaign by pointing the ads out to current or prospective customers interested in greater yields from their farms. And make sure you're not caught short during the Spring rush . . . order your supply of nitrogen-bearing, non-leaching USS Ammonium Sulfate, today!

USS Ammonium Sulfate

USS

UNITED STATES STEEL

Industry, Experiment Station Groups Join TVA for Fertilizer Conferences

WILSON DAM, ALA.—A joint conference of TVA-state experiment station cooperators and the Fertilizer Work Group of the Southern Regional Soil Research Committee was held at the TVA Fertilizer-Munitions Research Center at Wilson Dam, Ala. recently.

Dr. L. E. Ensminger, Auburn, Ala., and Dr. George Stanford, TVA, Wilson Dam, acted as co-chairman of the conference. Although similar groups have met separately in previous years, this year is the first in which the two groups have met jointly to discuss fertilizer evaluation problems.

The conference was attended by 65 agronomists and chemists of 12 states of the Southern Region, the Agricultural Research Service, U.S. Department of Agriculture, and TVA. State cooperators in TVA fertilizer evaluation work also attended from Colorado, Iowa, New York and Washington.

W. L. Hill, USDA, Beltsville, Maryland, in discussing problems encountered in fertilizer evaluation, emphasized that a nutrient mixture, such as an UPK fertilizer, should be characterized as to (1) chemical and physical nature of the components, (2) associated salts, (3) intimacy of contact of carrier salts and (4) fineness or granularity. These specifications must be defined for successful evaluation under different soil conditions.

Uses of radioisotopes in soil fertility research were reviewed by Dr. L. E. Ensminger and Dr. R. W. Pearson of the Alabama Agricultural Experiment Station. They called attention to certain limitations in their use which have emerged as a result of accumulated experiences. T. P. Hignett and A. W. Slack, TVA, Wilson Dam, reviewed current development and possibilities in fertilizer technology. He said that much of the granulated fertilizers produced in the U.S. are made under what has come to be known as the "TVA process" for granulation.

Formulation of high analysis mixtures, properties of slowly soluble fused potassium-calcium phosphates, liquid fertilizers, and other topics were discussed by these two men. Other important topics relating to fertilizer evaluation, including phosphorus fixation in soils, were discussed.

Chief topics for discussion by the Fertilizer Evaluation Work Group were reports of research in connection with regional projects on the need for sulfur in southern soils and evaluation of rock phosphate for field crops in the South.

State experiment station-TVA cooperators reported on research with TVA fertilizers, including concentrated superphosphate, diammonium phosphate, calcium metaphosphate, high-alumina nitric phosphates from Florida leached zone phosphate ores, and other nitric phosphates. These fertilizers are all produced at Wilson Dam, and some are yet in experimental stages.

The two fertilizer evaluation groups are to meet again jointly at Wilson Dam in 1957.

Industry distributors of TVA fertilizers and Division of Agricultural Relations personnel at TVA also met recently to discuss their joint educational fertilizer program. William Nichols, Sylacauga (Ala.) Fertilizer Co., was chairman of the meeting. Ray Sorenson of Cornland Plant Foods, Grinnell, Iowa, was elected chairman for the next meeting, tentatively set for January 1957.

Ed Newman, one of TVA's chemical engineers, said that two main objectives were to find out how to make better and cheaper fertilizers and to maintain the national defense establishment.

Mr. Newman said that TVA patents for fertilizer processing are licensed to about 80 different small to medium-sized plants with each plant using four or five different processes. The processes are licensed at no cost.

Some of the projects under way at Wilson Dam include ammoniation and granulation studies of fertilizers; production of ammonium phosphate-nitrate — 25-25-0, 17-17-17; ammonium metaphosphate—17-73-0; and studies on liquid fertilizer. Mr. Newman believes that the 17-73-0 product looks promising for use in liquid fertilizers. However, there yet remain problems of production to be ironed out in the manufacture of the extremely high analysis fertilizer, such as salting out.

Attending distributors that handle the TVA products represented the following companies: Capital Fertilizer Co., Cornland Plant Foods, Darling and Co., Epting Distributing Co., International Minerals and Chemical Corp., Mutual Fertilizer Co., Olin-Mathieson Chemical Corp., Stevens Industries, Inc., Summers Fertilizer Co. and Sylacauga Fertilizer Co.

AT TVA FERTILIZER CONFERENCE—Top photo: T. P. Hignett, chief of TVA's development branch of the division of chemical development appears on the program at the recent joint conference of TVA, state experiment station cooperators and the fertilizer work group of the Southern Regional Soil Research Committee, at Wilson Dam, Ala. In the middle photo, left to right, are W. B. Andrews, Mississippi Agricultural Experiment Station, State College; Dr. Martin E. Weeks, assistant director of the Division of Agricultural Relations, TVA, and Howard V. Jordan, Agricultural Research Service, USDA, State College, Miss. In the lower photo are Dr. D. J. Lathwell, New York Agricultural Experiment Station, Ithaca; Dr. A. G. Caldwell, Texas Agricultural Experiment Station, College Station, Texas; Dr. Walter P. Mortensen, Western Washington Experiment Station, Puyallup, Wash., and Dr. J. R. Neller, Florida Agricultural Experiment Station, Gainesville.

Arkansas County to Stress Soil Testing

HARRISBURG, ARK. — Soil testing for better production of crops will be a major goal on Poinsett County, Ark. farms in 1956. John Shults, Poinsett County agent, said a goal has been set for testing 50,000 acres during the year.

The Poinsett County Soil and Water Management Committee pointed out that in 1954 only about 15,000 acres were soil tested. In 1955 the acreage jumped to 30,000 and during the first month of 1956, about 13,000 acres were tested.

The Poinsett County Soil and Water Committee is composed of Billy Bradford, George Carpenter, Jr., Jack Herndon and Eddie Davis, all of Lepanto; Albert Fair of Marked Tree, and Mr. Shults of Harrisburg.

Wheat Growers Hear of Progress In Pest Control

PORTLAND, ORE—The U.S. Department of Agriculture's Agricultural Research Service has made good progress in controling insect pests of wheat, both through use of new insecticides and by development of resistant varieties, K. S. Quisenberry, crops research director for the agency, said during the recent 6th annual National Association of Wheat Growers convention here.

"Only a few years ago, the control of such wheat pests as mites, green bugs and other aphids by chemicals was considered impractical, but the development of potent organic phosphates, which kill 95 to 100% of these pests with as little as one-quarter pound of toxicant an acre, has made chemical control a common practice," Mr. Quisenberry declared.

Treatments with insecticides for control of false wireworms are also common practice in areas where these insects are destructive, the research chief explained. Improved application equipment has been an important contribution to the more efficient and practical use of insecticides, he said.

"We're quite encouraged with our work on chemical control of wheat smut," Mr. Quisenberry told some 600 wheat growers and their wives from 11 producing states. "Tests at the Washington station followed by nursery-scale trials in five northwestern states, and by large-scale commercial tests, show that treating seed with hexachloro-benzene does an effective smut control job."

He told the wheat growers that unfortunately, chemical seed treatments haven't worked on dwarf smut. This is probably because at least a part of the life cycle of dwarf smut is somewhat different from the two species of common smut, he said.

"We are working on the dwarf smut problem and hope, through physiological studies of the disease and the plant, to come up with a chemical treatment that will control it," Mr. Quisenberry said. "In the meantime resistant varieties are our means of combatting dwarf smut, and we have our fingers crossed as to whether our existing varieties will hold up under new races of the disease that are now showing up."

The wheat men also heard the research worker explain that the research door to streak mosaic was opened recently by Dr. Slykhuis of Canada when he found that the virus is carried from field to field and from plant to plant by microscopic mite. The mite apparently feeds on virus-infected grasses and volunteer wheat and is then carried by wind or larger insects to uninfected fields.

Since the streak mosaic carrying mite can live only about a week without feeding, a large measure of control can be obtained by breaking the cycle through clean tillage between harvest of spring wheat and fall sowing of winter wheat, Mr. Quisenberry said.

"Biological control of insects is another research field we might well explore more fully," the USDA crops research head said. "We have found that biological control of insects is showing promise in other areas of agriculture. Examples are the European corn borer parasites and insects that destroy Klamath weed."

Ezra Taft Benson, secretary of agriculture, said the proposed soil bank program will help the farmer by cutting surpluses, by strengthening commodity prices and by providing payments for seeding unused land with pasture grasses and trees.

Closing session of the three-day meeting saw the National Assn. of Wheat Growers pass a resolution calling for immediate congressional adoption of the two price wheat plan.

GYPSY MOTH

(Continued from page 1)

Gypsy moths on New England forest trees for the 1933-52 period to about $6½ million, or approximately $332,000 a year.

Far exceeding these losses, probably, are intangible and aesthetic losses in damaged sites, future timber production, watershed protection, and related forest and recreational values. About 100 million acres of oak and other woodlands south and west of the infested region are considered highly susceptible to damage should the moth become established there.

The center of an isolated infestation of the gypsy moth near Lansing, Mich., discovered in 1954, was cleaned up in 1955 by insecticidal spray treatments. Intensive trapping surveys and treatment of fringe-area infestations will be continued, aimed at early eradication of the pest in that State.

In the spring of 1955, DDT sprays were applied by aircraft and mist blowers to control the moth on more than a million acres in the Northeast. Most of this acreage was treated by state agencies, with assistance from USDA.

In contrast to the moth's westward and southward spread, its numbers in central and eastern New England, where it has long been a pest, are at the lowest level in many years. Expanded local spray programs and the prevalence of wilt disease—a virus-caused condition that often kills large concentrations of gypsy-moth caterpillers — are credited with causing this decline.

Female gypsy moths cannot fly, but the tiny caterpillars spin long silken threads and suspend themselves from the trees they attack. They are carried by winds for long distances, sometimes at heights up to a thousand feet. The 1954 and 1955 hurricanes are suspected of causing part of the recent spread.

Peanut Acreage Allotment for 1956

(See story on page 1)

State	1956 allotment announced Oct. 6, 1955	Increase for Virginia and Valencia type	Final allotment
Alabama ..	217,965	32	217,997
Arizona	717	0	717
Arkansas ..	4,220	0	4,220
California ..	940	0	940
Florida	54,777	23	54,800
Georgia ...	524,611	722	525,333
Louisiana ..	1,963	0	1,963
Mississippi..	7,557	0	7,557
Missouri ...	246	0	246
New Mexico	4,906	482	5,388
N. Carolina.	168,813	22,945	191,758
Oklahoma .	137,323	0	137,323
S. Carolina .	13,743	768	14,511
Tennessee ..	3,564	106	3,670
Texas	355,063	0	355,063
Virginia ...	105,542	15,103	120,645
	1,601,950	40,181	1,642,131
Reserve ..	8,050	161	8,211
	1,610,000	40,342	1,650,342

Production of Inorganics Shows Gain in December

WASHINGTON — Production of synthetic anhydrous ammonia during December totaled 272,748 short tons, compared with 253,687 short tons in December, 1954, according to the Bureau of the Census, U.S. Department of Commerce.

Output of fertilizer grade ammonium nitrate was 167,675 short tons, a gain from 163,213 short tons in December, 1954. Production of synthetic ammonium sulfate, excluding coke oven output, totaled 104,457 short tons, compared with 94,620 short tons in December, 1954.

Phosphoric acid production also showed a gain, from 264,317 short tons in December, 1954 to 304,081 short tons last December.

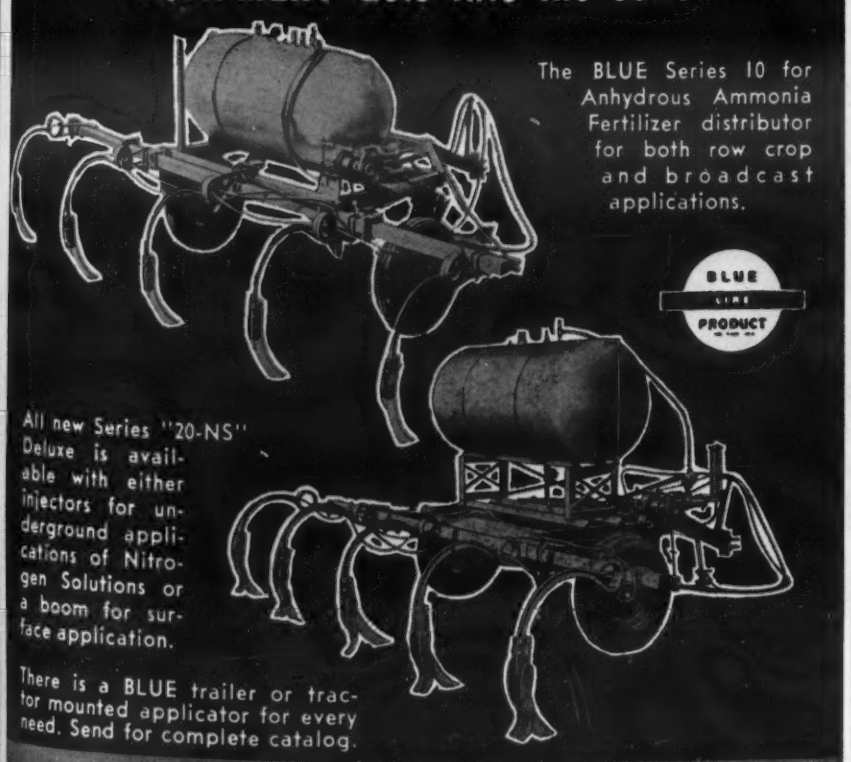
MISSOURI SHORT COURSE

COLUMBIA, MO. — The annual aerial applicators short course sponsored by the Missouri College of Agriculture is scheduled to be held here March 6-7.

For Anhydrous Ammonia and Nitrogen Solutions

BLUE

EQUIPMENT Gets Into the Soil!



The BLUE Series 10 for Anhydrous Ammonia Fertilizer distributor for both row crop and broadcast applications.

BLUE LINE PRODUCT

All new Series "20-NS" Deluxe is available with either injectors for underground applications of Nitrogen Solutions or a boom for surface application.

There is a BLUE trailer or tractor mounted applicator for every need. Send for complete catalog.

JOHN BLUE CO., INC.

Huntsville, Alabama *Dependable Farm Equipment Since 1886*

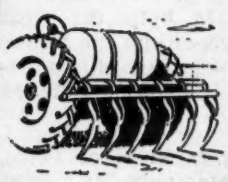
Mathieson

the LINE to PROFIT

AMMO-PHOS®

HIGH ANALYSIS PELLETIZED FERTILIZERS

also High Quality Regular Grades



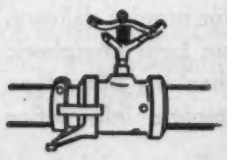
ANHYDROUS AMMONIA

(82% Nitrogen)

AND AMMONIA APPLICATORS

PESTICIDES

INSECTICIDES, HERBICIDES, FUNGICIDES AND GRAIN STORAGE FUMIGANTS



IRRIGATION SYSTEMS

PORTABLE ALUMINUM TYPE

2091-C

Write Mathieson today

OLIN MATHIESON CHEMICAL CORPORATION

MATHIESON PLANT FOOD DIVISION • LITTLE ROCK, ARKANSAS

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

American capital amounting to about $411,000 is needed by a Brazilian firm to construct a new factory and to purchase machinery and equipment for the manufacture of insecticides, disinfectants and related products in Sao Paulo.

The firm of Produtos Beko, Ltda., has been in the business for some years, reports the U.S. Department of Commerce, but a new company, Industrias Quimicas Reunidas Bek, S.A., has been formed to take over its activities. While American investors are not offered a share in the management at present, this aspect may be subject to negotiation. The firm is covering a wide field and proposes to produce greases, lubricants, pitch, black paint, water-proofing, products for agriculture, and cleaning fluid in addition to insecticides.

Interested firms may address correspondence to Professional Services Corp. de Brasil, S.A., Caixa Postal 8316, Sao Paulo.

Turkish Plant

Good progress is being made in the construction of the new plant at Kutahya, Turkey, for the production of ammonia from gypsum. Nitrogen Industries, Ltd., the Turkish firm concerned, will use 100,000 tons of gypsum and 2,500 tons of sulfuric acid to produce 60,000 tons of ammonium sulfate a year.

The sulfuric acid will come from the by-products acid plant at the Murgal copper smelter in eastern Turkey.

Seed Treatment

"Despite the steady progress in the development of chemicals for the treatment of seed, there appears to be much more of a lag in farm usage in this particular field than in others."

This pertinent observation has been made by Wilfred G. Malaher, director of the Searle Grain Co.'s research department at Winnipeg. His remark, however, is applicable to many other countries besides Canada.

Farmers are quick to adopt new varieties of grain and other crops as they become available. They appear to be well informed, too, about the various herbicides and fertilizers and to be making increasingly greater use of these aids to better farming and greater production.

But when it comes to the preparation of seed for planting—and that takes in both the cleaning operation proper and the treatment of the seed—the record is, for some reason, not as favorable, Mr. Malaher says.

The trade, as in other fields, has been doing some valuable educational work. The treatment of smut and other seed borne diseases, Mr. Malaher points out, has come a long way since the days when the use of formaldehyde was standard practice, and there are now available a number of reliable organic mercury chemicals for the treatment of seed which can give satisfactory protection at a relatively small cost. In addition, there is now protection in the form of dual purpose treatments against seedling blight, root rot and even wireworm damage.

At many points dealers have provided facilities for the work, and the farmer is assured of a 100% effective job. This alone should be an incentive. The practice of treating seed will become more general only when the benefits resulting from it are fully realized and appreciated.

Uruguayan Production

Uruguay produces 60,000 tons of calcium superphosphate a year. Additionally, the plants make about 30,000 tons of organic fertilizer, including guano, fertilizing compounds, meat and bone meal, dried blood, fish meal and packing house residues.

Currently, exports of fertilizers are prohibited, but the authorities say that whenever they reach a condition of surplus they propose to go out into the world market. However, the impact on the export trade is not likely to be large, observers say.

Aerial Spraying

The Canadians have been experimenting with aerial spraying. Preemergent weed sprays were applied from the air during January to about 100 acres of bulbs, chiefly daffodils and tulips, on Vancouver Island. It was necessary to do this because wet weather last fall prevented spraying by ordinary means.

The cost per acre for applying 2.4 lb. of CMU and 2 lb. of CIPC was $17 for materials and about $6 for the actual spraying operation.

The spray used was based on experimental work done at the Saanichton experimental farm of the Canadian government's Department of Agriculture.

Puerto Rican Plans

A plant is being built in Puerto Rico for the production of 100,000 tons of sulfuric acid, 42,000 tons of ammonia plus aqua ammonia and sulfate of ammonia. It is part of a general development scheme to bring increased employment to the territory.

Puerto Rico has eight fertilizer mixing plants, one of them a complete fertilizer plant. The ammonia production from the new factory will be absorbed by these eight plants in their fertilizer business.

FORUM DELAYED

FRESNO, CAL.—The meeting of the Central California Agricultural Forum, usually held early in March, is being delayed because of the Western Cotton Production Conference to be held in Fresno March 6-7.

American Potash To Set Up Portland, San Francisco Offices

LOS ANGELES—American Potash & Chemical Corp. has announced plans to set up district sales offices in March at San Francisco and Portland, Ore.

The company's San Francisco sales office, which will be located in the Russ Bldg., will handle sales in northern and central California, as well as Nevada, Utah and Colorado. The Portland sales office will cover Oregon, Washington, Idaho, Montana, Wyoming and British Columbia.

Announcement of the plans was made by William M. Clines, western sales manager, who said that opening of regional offices was a part of the company's current development and expansion program.

Rod Taft, previously supervisor of potash sales, will be transferred from Los Angeles to San Francisco as district sales manager, while Paul F. Staub has joined American Potash & Chemical Corp. as Pacific Northwest district sales manager, operating from Portland. Mr. Staub previously was district manager in Portland for L. H. Butcher Co. for 10 years and, prior to that, was with General Chemical Division of Allied Chemical & Dye Corp. for 11 years as salesman and assistant sales manager of the General Chemical offices at San Francisco.

Incorrect Headline Appears on Announcement Of New Chipman Plant

An incorrect headline was used on page 1 of the Feb. 13 issue of Croplife over a story of the announcement by Chipman Chemical Co., Bound Brook, N.J., of plans to erect a 2,4-D plant at Portland, Ore. The headline stated, "Chipman Chemical to Construct DDT Plant in Portland."

While the story was correct in stating that the firm would construct a 2,4-D plant, Croplife regrets the typographical error in the headline.

Subsequently, Chipman Chemical has announced that this will be a million dollar plant, and that production is slated for mid-May of this year.

California Pesticide Registration Shows Gain

SAN FRANCISCO—A total of 972 firms was registered for pesticide sales in California in 1954-55, compared with 947 firms a year earlier, according to the California State Department of Agriculture.

The number of firms and the 11,587 products registered in 1954-55 represented an all-time high.

Solve liquid fertilizer storage problems quickly, economically and efficiently. A&C rubber-lined tanks are ready for prompt delivery. They assure complete corrosion protection from both phosphoric acid and nitrogen solutions . . . cost far less than any other type of dual-purpose tank. Send coupon for complete information today!

ABRASION & CORROSION ENGINEERING COMPANY
P. O. BOX 3568 AMARILLO, TEXAS

Abrasion and Corrosion Engineering Company
P. O. Box 3568, Amarillo, Texas

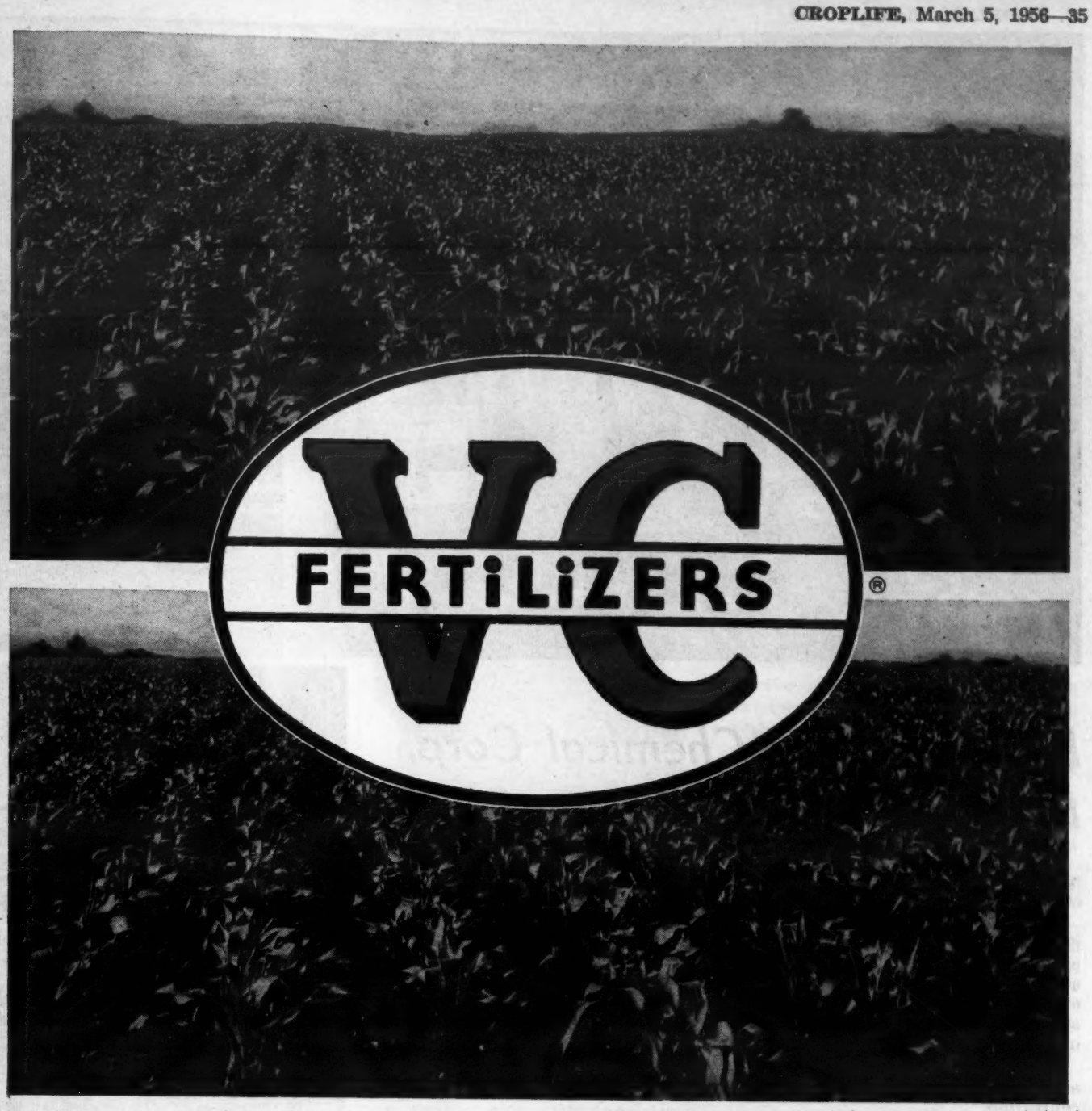
Gentlemen:
Without obligation, please send me complete information on low-cost A&C rubber-lined tanks.

Name_____
Company_____
Address_____
City_____ Zone_____ State_____

C. M. Campbell F. M. Whittaker A. J. Sohmer

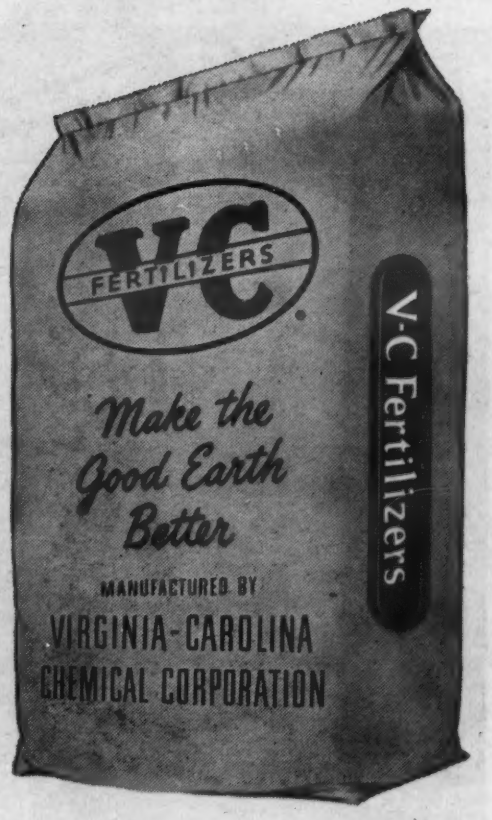
SALESMEN TRANSFERRED—Union Bag & Paper Corp. has announced the following territorial changes in its multiwall bag sales organization. C. M. Campbell, former southeastern sales representative, will handle multiwall bag sales in Minnesota, North Dakota and South Dakota. He will headquarter in the company's Minneapolis office. F. M. Whittaker transfers his headquarters from Minneapolis to the company's Chicago office. His new sales territory includes Iowa, western Illinois and part of Chicago. A. J. Sohmer, former midwestern sales representative, will handle multiwall bag sales in Delaware, Maryland, Virginia and part of West Virginia. He will headquarter in the company's Baltimore office.

Boosting YOUR SALES THIS AD and others like it are appearing in leading farm publications read by YOUR customers



Two crops per year from the same land

Many leading farmers have more than doubled their corn yields by greatly increasing their per-acre application of V-C Fertilizer. It's like growing two crops of corn on the same land the same season. Yet they plow, plant and cultivate only one. The extra bushels added to your yield by V-C Fertilizer are the most economical and most profitable bushels you produce. When you double your acre yield with V-C Fertilizer, you greatly reduce your cost per bushel and increase your net return. Start now to make your corn pay you more. Produce big yields of high-quality, high-feed-value corn per acre at low cost per bushel. Use good seed, close spacing, approved cultural practices and a heavy application of V-C Fertilizer.



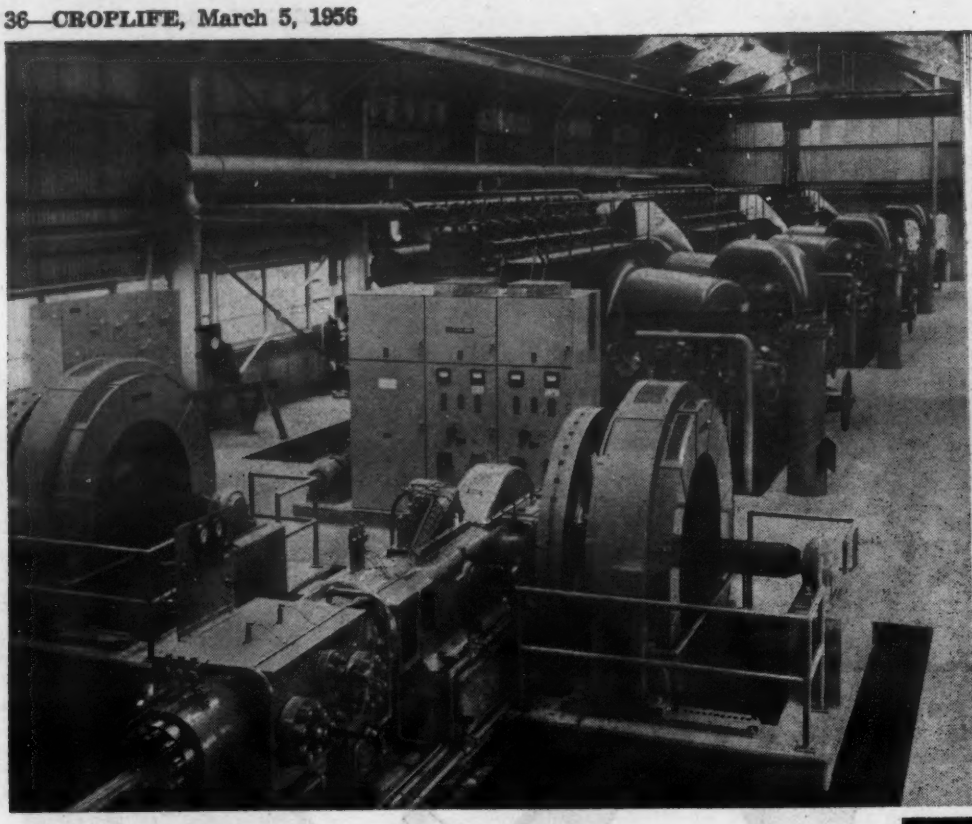
See Your V-C® Dealer

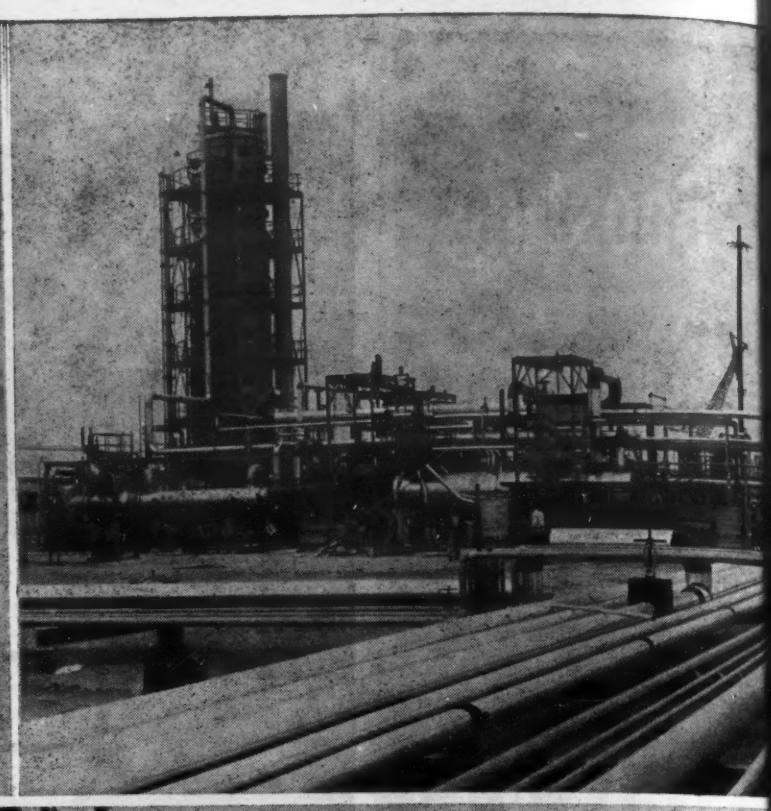
Get the facts on the complete line of V-C Fertilizers, produced in a V-C factory located near you, for crops and soils in your vicinity. Ask about top-quality **V-C PROLIFIC,** the superior blend of better plant foods fortified with important minor elements lacking in many soils. V-C Fertilizers and V-C Superphosphates are backed by more than 60 years of experience in serving millions of farms in many states.

IT PAYS TO BE A V-C DEALER!

VIRGINIA-CAROLINA CHEMICAL CORPORATION • RICHMOND 8, VIRGINIA

Albany, Ga. • Atlanta, Ga. • Baltimore, Md. • Birmingham, Ala. • Carteret, N.J. • Cincinnati, Ohio • Columbia, S.C. Dubuque, Iowa • East St. Louis, Ill. • Fort Wayne, Ind. • Greensboro, N.C. • Hopkinsville, Ky. • Jackson, Miss. • Memphis, Tenn. Montgomery, Ala. • Norfolk, Va. • Orlando, Fla. • Richmond, Va. • Savannah, Ga. • Shreveport, La. • Wilmington, N.C.





Escambia Bay Chemical Corp. Dedicates New Nitrogen Plant

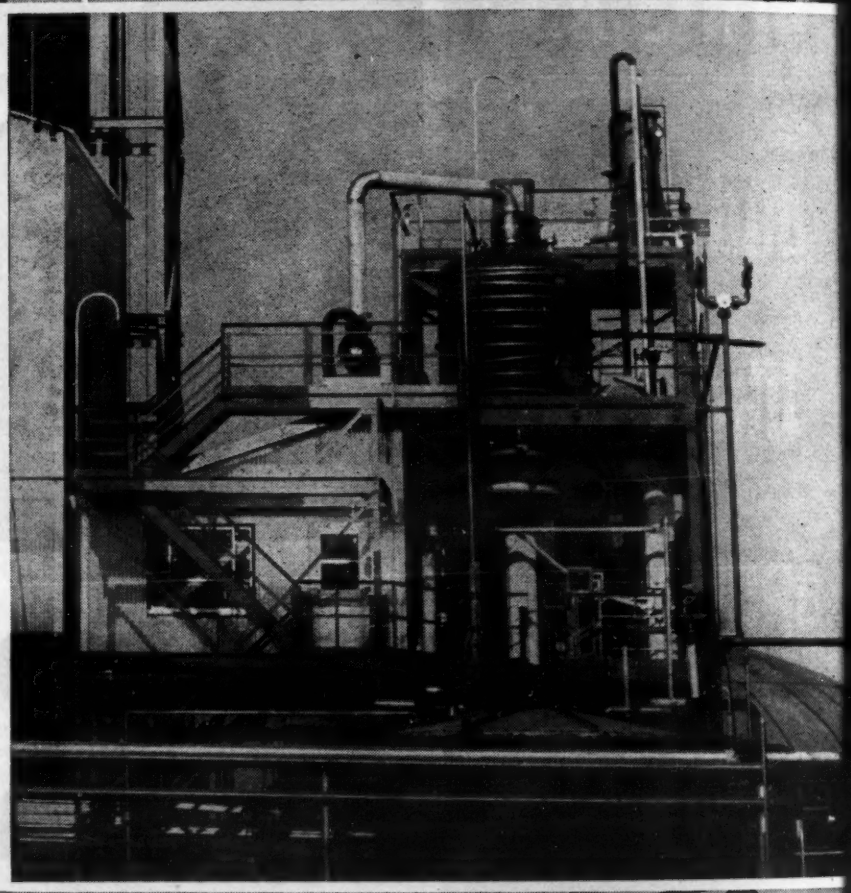
PENSACOLA, FLA.—Escambia Bay Chemical Corp.'s new $25 million nitrogen plant at Pensacola, Fla., was dedicated Feb. 17 with appropriate ceremonies. (Croplife, February 27, page 1.) Here are views of the plant:

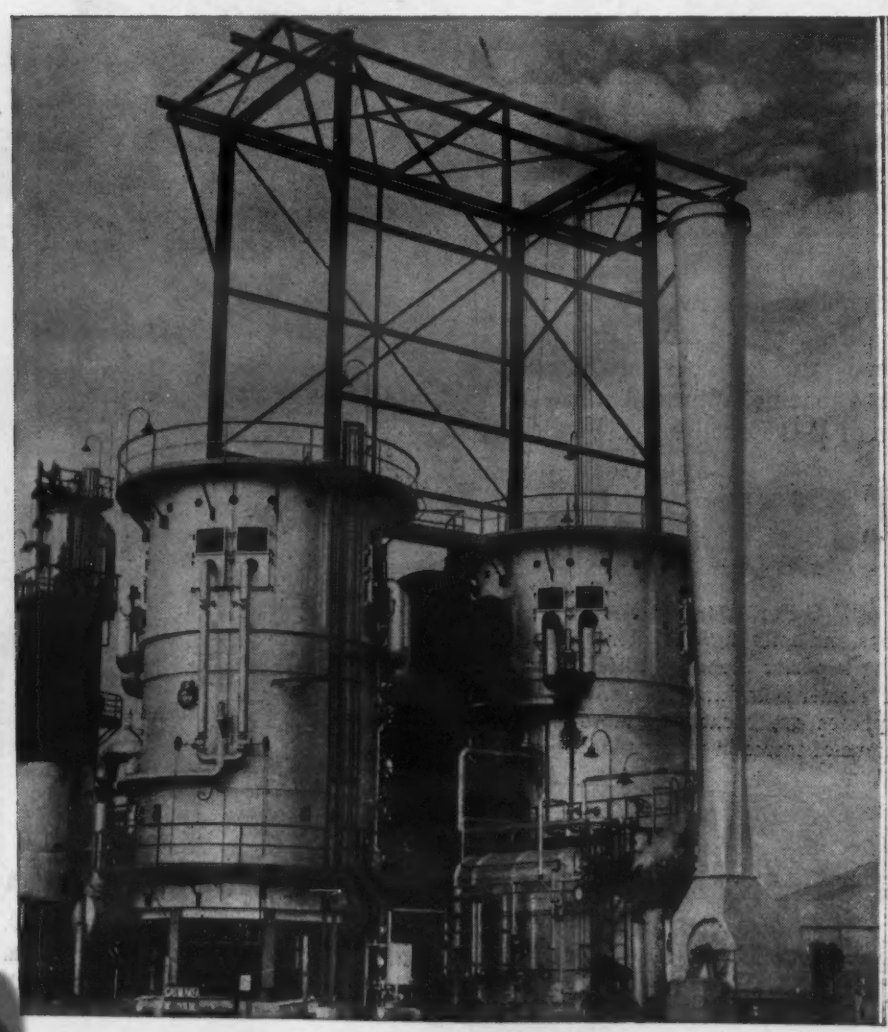
Across top of page, left: compressors which take purified hydrogen and nitrogen gases and compress them in four steps to a final pressure of 5,200 psi. Photo at right shows water absorption tower which produces 56% nitric acid. Liquid ammonia from storage is vaporized, mixed with air, and passed over a platinum catalyst where the ammonia is converted to water vapor and oxides of nitrogen. The latter are absorbed from these gases as they pass upward through the tower.

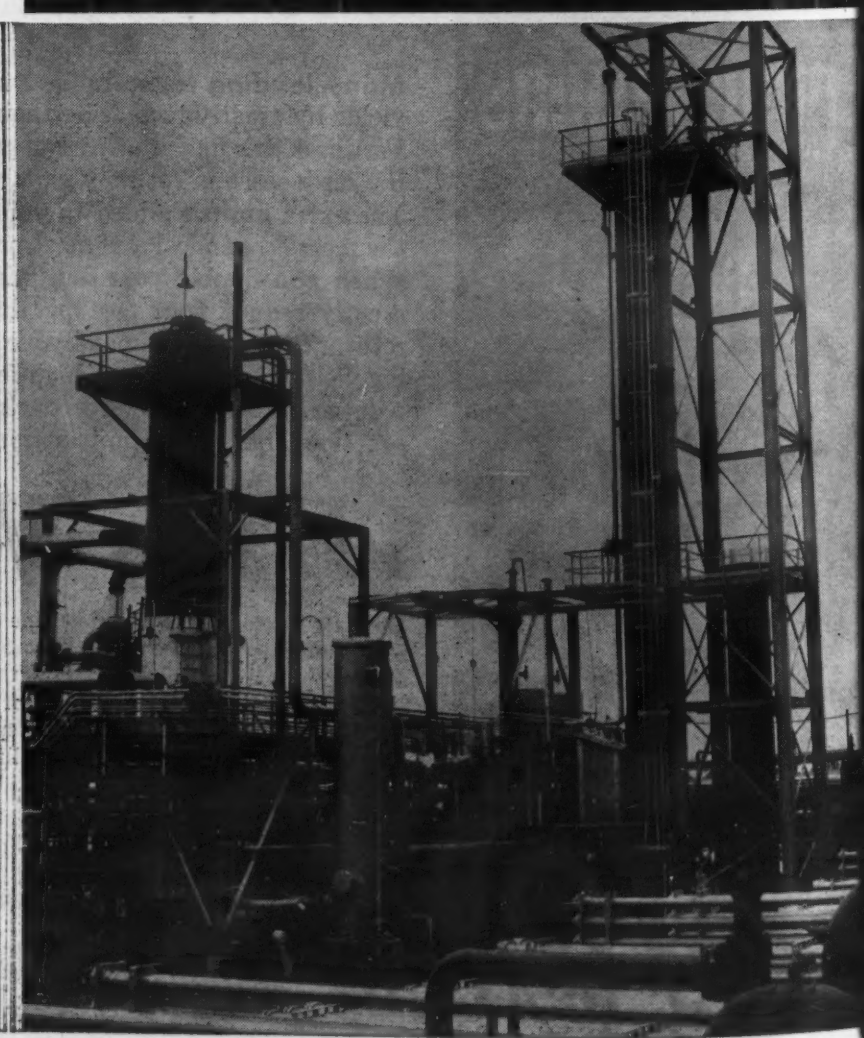
At the right is the neutralizer in which anhydrous ammonia and nitric acid are mixed to produce ammonium nitrate solution of about 83% concentration.

At the left, below, are the gas reformers which operate at temperatures of 1,200° to 1,600° F. The resulting gases are a mixture of pure hydrogen, pure nitrogen, carbon dioxide and carbon monoxide. Part of the heat added to these gases in the reforming processes is recovered through a system of heat exchangers and is thereby used in other parts of the plant.

At the right, below are scrubbing towers where carbon dioxide and carbon monoxide are removed from the gases. This plant is said to be the first in the United States to utilize potassium carbonate absorption for removal of carbon dioxide.







FARM PROGRAM

(Continued from page 1)

sition which makes him top man olicy-wise within the party and puts l Republican candidates for office nder obligation to follow his party adership.

At the same time that he said he ould be available as the party can- date, Mr. Eisenhower reaffirmed his eat distaste for rigid high farm ice supports. He failed, however, say that he would veto such a bill presented to him.

That item was a matter of con- cture here but such speculation is en as capricious, since the chief ex- utive has been so emphatically and nsistently on public record as gainst rigid high price supports that is inconceivable that he would back ack under any pretense at this late our.

As each day goes by without a new il bank provision, the soil bank for heat becomes a declining prospect. he government goal was a reduction all wheat acreage by between 12-15 illion acres for the 1956 crop which ould mean a green-manure treat- ent for some winter wheat.

With congressional action now seen eferred to not earlier than April 1, is forecast at the U.S. Department Agriculture that possibly not more an five million acres can enter the il bank provisions for all wheat this ear—substantially below the ad- inistration hopes.

The problem of corn is up in the ir. As the original Senate bill reads, corn would be eligible for oil bank payments if the corn farmers reduced their allotted acre- ge below the 43 million odd acres uthorized for the commercial corn elt. Few persons believe that even the most generous soil bank pay- ment could persuade the corn farm- rs in the commercial area to cut ack below that allotment level. Therefore, the corn participation in the soil bank was viewed as mean- ingless.

To offset that condition Sen. Hick- nlooper (R., Iowa), offered a com- licated amendment—probably sub- ct to revision before Senate debate n it—wherein he is said to have in- ended that corn for the purposes of he soil bank would be granted a asic acreage allotment of 56 million cres for 1956.

This allotment is a base or bench ark figure from which farmers could educe acreage for their farms. To he extent that they reduce below the ench mark they would be eligible r soil bank payments. The Hicken- ooper amendment may produce as uch as 8 million acres as a corn elt contribution to the soil bank creage reserve program.

What is yet unclear about the ickenlooper amendment is the level f support available to the cooperat- ng farmers as their certificate values s a soil bank participant is deter- ined. USDA has already fixed the rice support level for the 1956 corn rop at approximately $1.40 bu. as a inimum under the provisions of the xisting law. The Hickenlooper mendment would in effect put corn r the next few crop years under the ategory of non-basic commodities hich can be supported at any level f parity support between zero and % of parity.

Despite these defects the Hicken- ooper amendment carries a lot of olitical appeal to Congress. As the resent law stands any level or price upport for corn has been ineffective, nce only a small percentage of corn rmers complied. Corn prices have nsistently ranged below the sup- rt level during this past crop year between 30-40¢ bu. under the avail- e loan rate and not all eligible rn farmers put their crop into loan. The Hickenlooper amendment is a ad bloc to many rigid high price pport advocates such as Sen. Hu- bert Humphrey (D., Minn.), whose interest in corn is greater than any support level for wheat. The same situation exists in the states of Indiana and Illinois where corn, soybeans and hogs are major farm income items, whereas wheat is secondary at best.

Leaders here feel that the Hickenlooper amendment when revised and refined will be adopted by the Senate and will assure a balance of Senate votes in favor of the retention of flexible price supports for the basic commodities. Furthermore, it means that the corn belt will get government soil bank checks this year about election time.

For the fertilizer industry the original Hickenlooper amendment provides that certificates available to a farmer participating in the acreage reserve provision of the soil bank may be redeemed in kind only to the extent that he will feed the redemption in kind to animals on his farm. That is interpreted to mean that of the value of his certificates he would obtain only two thirds of his "in-kind" redemption in grain. The balance would be available to him in cash. The redemption in kind would not be available for market sale or distribution.

That condition points up a possibility noted last week by Croplife that if the legislation passes in time the fertilizer industry may be able to persuade the farmer to buy his plant nutrients in exchange for his cash availability from his soil bank certificates.

The legislative schedule of the Senate now calls for the start of the final vote on March 8. This of course is subject to the rambling procedure of the Senate chamber which may be upset if some senator takes off on some bypath. By common consent there will be a limitation on debate as to amendments and as to the final bill.

at VULCAN®

All styles of steel pails and drums —Sizes 1-1½-2-2½-3 3½-4-5-6-6½-10-12 gallons

Available with all types Nozzles and Pouring Spouts

Vulcan makes the finest open head steel pails and closed head drums in the above sizes... Every pail thoroughly tested... All meet rigid I.C.C. specifications.

Hi-Bake Linings Assure Protection

Vulcan chemists will work with you to develop a Hi-Bake protective interior lining to meet your specifications and packaging problems... Your assurance of "positive product protection." Complete facilities available to design and lithograph your Brand Name on any size or style container.

If we don't have what you want—we'll design it!

Call or write today for samples and more information.

OVER 40 YEARS CONTAINER EXPERIENCE

VULCAN CONTAINERS INC.

Bellwood, Illinois (Chicago Suburb) Phone: Linden 4-5000
In Toronto, Canada—Vulcan Containers Limited.
Representatives in all Principal Cities

BUY and SELL through WANT ADS

here's a line-up of **SURE PROFIT-MAKERS** for you

Dealers throughout America have discovered that stocking Armour's fertilizers means *extra* sales . . . and *extra* profits! Armour's stands for quality plant food—a product your customers can depend on for the best possible results! A hard-hitting advertising program in national magazines, farm publications and daily newspapers keeps Armour's fertilizers before the public . . . and pre-sells the outstanding job these top-quality fertilizers can do for the grower. A variety of point-of-sale material helps at the retail level, too!

Armour's customers—farmers, gardeners, lawn enthusiasts—are also "natural" buyers of seeds, farm implements, garden tools and other related items. Take advantage of this opportunity for increasing business! Put Armour's to work for you today!

For further information, contact Armour Fertilizer Works, P. O. Box 1685, Atlanta, Ga. or your nearest Armour Fertilizer Works office.

ARMOUR FERTILIZER WORKS

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

High Priced Farm Land Demands More Efficiency

This question frequently arises in various groups interested in the welfare of agriculture: "Why do farm lands remain so high in cost in the face of an apparently declining agricultural economy?" Does it not mean that despite all the turmoil over farm prices, there still remains a great deal of confidence in farming as a profit-making business?

In a study of this phase of agricultural economics, the U.S. Department of Agriculture has just presented some interesting facts and figures on the subject. It points out that if agriculture is viewed as one large industry, its land, buildings, livestock, machinery and equipment, plus liquid reserves, come to a market value of $163 billion.

The largest single item is that of farmland and buildings, which total $91 billion, or 57% of all our farm assets. Thus, it is easy to see why many people view the price of farmland as a barometer of the general economic position of agriculture because this figure tends to reflect the degree of confidence that people have in the future of farming.

Most farm products flow into central markets where hourly, daily, and monthly prices are set. But farm real estate is a unique commodity. Its price is set by thousands of individuals who buy and sell farmland in thousands of communities each year.

To get accurate, timely reports on what's happening in the farm real estate market, USDA maintains an extensive network of local observation posts throughout the country. This network was started in 1912 with a voluntary crop-reporter group. In 1926, a special group of farm-real estate dealers and other informed people were added. From reports of both groups, reliable statistics have been gathered to show the trend in farmland values for each state.

Currently, this team of nonpaid local observers totals about 16,000 farmers, who report three times a year, and about 10,000 special real estate reporters, contacted by mail surveys twice a year. Agricultural Research Service production-economics research economists summarize, analyze, and evaluate the results and publish reports three times a year for general distribution.

What does this research show? It gives proof that land values tend to rise and fall with farm income and other indicators of business conditions. But the relationship is not perfect. Land values never rise as high or drop as low as earnings for a year or two seem to justify.

The outbreak of World War II sparked the longest steady rise in land values since records were started in 1912. Values had nearly doubled by late 1948, then dipped slightly from the mild post-war recession.

Then Korea came along and boosted values another 20% within 16 months. This put values at a new all-time peak 23% above the previous peak in 1920. As farm income started to decline in late 1952, land values also slipped—but not nearly as much as farm income.

Then a unique situation developed. Land values firmed and a rise began. It continued through 1955 — setting a new peak — even though farm income was declining. Values had risen 8% since the 1952 low!

What happened to upset the hand-in-hand relationship observed over 43 years? From local observers' reports and other material, the economists conclude that several new factors are operating to offset the expected effects of lower income:

1. Farmers have continued to bid strongly for land to enlarge their farms. Caught in a squeeze between lower prices and rising costs, farmers find mechanization is one means of reducing production costs per unit. Often, more land is needed to make more efficient use of machinery farmers have or want to buy.

2. Credit to finance farm purchases has become more readily available. Several major lenders reduced interest rates and raised appraised values for loan purposes in 1954.

3. The booming nonfarm economy, and prospects for continued population growth, has indirectly helped to hold land prices up. This leads many people to believe that a farm is still a sound long-term investment. It is tangible and, they believe, more likely to maintain its value if inflation occurs.

Noting the rapid increase in population and the fixed supply of land, many people are inclined to minimize the current less-favorable relationship between income and land price when they bid for land.

But too much reliance should not be placed on an increasing population to bring about a "scarcity value" of land. The potential capacity of our farm plant, along with technical advances in prospect over the next 20 years, seems capable of meeting increased food and fiber needs.

More efficient production of farm products, and returns to agriculture comparable with other sectors of the economy, may be more important problems in the years ahead than "food enough." The real basis for land values in the future, as in the past, must be their long-term potentiality for farm earnings.

These prospects all appear favorable for the long-pull future of the various industries that make and distribute chemicals for agricultural use. As lands increase in value, it will make efficiency more and more an absolute necessity. What the trade will have to keep in mind is that a continual selling effort must be made.

The use of fertilizer obviously fits into this picture. But so do the other chemical products: weed killers, fungicides, insecticides, defoliants—all of which reduce labor costs and help the grower to make a better profit on high-priced land.

Prescription Herbicides Ahead?

"We have only begun to utilize the versatility of some families of herbicidal compounds. Within one general molecular configuration there are compounds that vary in water solubility from almost complete solubility to those which are soluble only at the exceedingly low rate of one part per million. Compounds in one family may vary widely in their rate of disappearance from the soil. This disappearance rate is likely to be affected by the micro-organisms which inhabit the soil. It may sometime become possible to analyze the weed situation just as we make soil tests, and prescribe the herbicide formula that is needed to do the job." —Dr. M. T. Goebel, E. I. du Pont de Nemours & Co.

Quote

" . . . The young science of weed control has a future that is as bright as we wish to make it. The potentials are enormous. The changing patterns in farming — and the increasing sizes of farms—provide an advantage and a challenge to weed researchers. As demands for food increase, we may find that weed control methods considered too expensive or impractical today may be highly efficient under different economic circumstances. We need a reservoir of information that will be available when it is needed."—Dr. Byron T. Shaw, administrator, Agricultural Research Service, U.S. Department of Agriculture, before Weed Society of America, New York City, Jan. 4, 1956.

Croplife

EPA *Member of Business Publications Audit*

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

•

LAWRENCE A. LONG
Editor

DONALD NETH
Managing Editor

EDITORIAL STAFF—George L. Gates, Market Editor; John Cipperly, Washington Correspondent; George E. Swarbreck, Canadian and Overseas Editor; Emmet J. Hoffman, Merchandising Editor; L. R. McDonald, Research Director; Frank W. Cooley, Jr., and Roger Berglund, Assistant Editors.

•

WILFRED E. LINGREN
Advertising Director

BUSINESS STAFF—Carroll K. Michener, Chairman of the Board of Directors; H. J. Pattridge, Honorary Chairman; Harvey E. Yantis, President; Milton B. Kihlstrum, Executive Vice President and Treasurer; Martin E. Newell, Vice President; Don E. Rogers, Vice President; Wilfred E. Lingren, Secretary and Advertising Director; Thomas A. Griffin, Business Manager; Edwin J. Hartwick, Circulation Manager; James G. Pattridge, Assistant Treasurer; Carl R. Vetter, Advertising Production Manager.

•

BRANCH OFFICES

EASTERN STATES—Paul L. Dittemore, George W. Potts, Co-Managers, 551 Fifth Ave., New York 17, N.Y. (Tel. Murray Hill 2-2185).

CENTRAL STATES—Don E. Rogers, Manager; Henry S. French, Assistant Manager; 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782).

SOUTHWEST—Martin E. Newell, Manager; James W. Miller, Assistant Manager; 612 Board of Trade Bldg., Kansas City 5, Mo. (Tel. Victor 2-1350).

WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

EXECUTIVE AND EDITORIAL OFFICES — 2501 Wayzata Blvd., Minneapolis, Minn. Tel. Federal 2-0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82). Cable Address: "Palmking," Minneapolis.

•

Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)

Associated Publications—THE NORTHWESTERN MILLER. THE AMERICAN BAKER. FEEDSTUFFS. MILLING PRODUCTION.

MEETING MEMOS

March 6-7—Fifth Annual Western Cotton Production Conference, Fresno Hacienda, Fresno, Cal.

March 14-18—National Agricultural Chemicals Assn., Spring Meeting; Hollywood Beach Hotel, Hollywood, Fla.; Lea S. Hitchner, NAC executive secretary, 1145 19th St. N.W., Washington 6, D.C.

March 28-30—North Central States Branch, Entomological Society of America, Purdue University Memorial Union, Lafayette, Ind.

April 10-12—Council for Agricultural and Chemurgic Research, 21st Annual Conference; Congress Hotel, Chicago; Sec., John W. Ticknor, Council for Agricultural and Chemurgic Research, 350 Fifth Ave., New York 1, N.Y.

April 16-17—Fourth Annual California Fertilizer Conference, Citrus Experiment Station, University of California, Riverside. Sidney H. Bierly, secretary, 457 Huntington Drive, San Marino 9, Cal.

May 7-9—Carolinas-Virginia Pesticide Formulators Assn., Inc., Spring Meeting, Ocean Forest Hotel, Myrtle Beach, S.C.; W. R. Peele, 516 S. Salisbury St., Raleigh, N.C., secretary-treasurer.

March 22-23—Michigan Pest Control Operators Assn., Michigan State University, East Lansing, Mich.

May 15—Western Agricultural Chemicals Assn., Spring Meeting, Hotel Clark, Los Angeles, C. O. Barnard, 2466 Kenwood Ave., San Jose, Cal., Executive Secretary.

May 16-18—Synthetic Organic Chemical Manufacturers Assn., Annual Outing, Skytop, Pa.

May 20-22—42nd Mid-year Meeting, Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago; H. W. Hamilton, secretary, 50 E. 41st St., New York 17.

June 10-13—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

July 12—South Carolina Fertilizer Meeting, Tour of Edisto Experiment Station, Blackville, S.C.

July 19-20—Southwestern Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 25-27—Northwest Association of Horticulturists, Entomologists and Plant Pathologists Conference, Northwest Washington Experiment Station, Mount Vernon, Wash.

Aug. 1—Kentucky Fertilizer Conference, Guignol Theatre, University of Kentucky, Lexington, Ky.

Aug. 22-24—Beltwide Cotton Mechanization Conference, Atlanta Biltmore, Atlanta, Ga., sponsored by National Cotton Council.

Nov. 19-20—Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., Secretary.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.

All Want Ads cash with order.

HELP WANTED

▼

AGRICULTURAL CHEMICAL SALESMAN WANTED

We are expanding our Agricultural Chemical Division and are looking for a good agricultural chemical salesman to cover the southern Illinois-western Kentucky area. If interested reply giving full resume of yourself including education, experience, age, photo and salary expected. Address Ad No. 1496, Croplife, Box 67, Minneapolis 1, Minn.

FERTILIZER MATERIALS SALESMAN

We are seeking a man with experience in the fertilizer or agricultural field with proven sales ability in these fields. Experience should be in the Missouri, Iowa, Kansas, Minnesota area.

This job involves selling of fertilizer raw materials to manufacturers. Our company is an established one with many years' experience and nation-wide coverage.

We prefer a man of some maturity, age range mid-thirties to early forties.

All inquiries handled in strict confidence. Send resume and indication of remuneration to: Ad No. 1457, Croplife, Box 67, Minneapolis 1, Minnesota.

Michigan Pest Control Operators Plan Meeting

EAST LANSING, MICH.—Michigan pest control operators in their annual conference March 22-23 at Michigan State University will face the challenge that "You Have a Role in the Welfare of Your Country."

Discussing the pest control operator's role in civil defense disaster relief will be two speakers, Philip Spear, technical advisor, National Pest Control Assn., and LaRue Miller, Lansing, Mich., Michigan Department of Health.

The annual conference, sponsored by the Michigan State University Department of Entomology and the pest control operators of Michigan, will be held again at Kellogg Center on the East Lansing campus.

International Congress Of Entomology Set

MONTREAL—The 10th International Congress of Entomology is to be held in Montreal, Aug. 17-25, with an expected attendance of 1,500 entomologists from 60 countries. Venue is McGill University and the University of Montreal.

IMC DIVIDEND

CHICAGO—The board of directors of International Minerals & Chemical Corp. has declared the regular quarterly dividend of $1 a share on the 4% cumulative preferred stock of the corporation and a quarterly dividend of 40¢ a share on the common stock, both dividends payable March 30, 1956, to stockholders of record March 16, 1956.

GOODBYE, MR. ROACH

AUBURN, ALA. — A state-wide campaign against roaches is scheduled in Alabama this year. Heading the fight against the pest will be Stella Mitchell and W. A. Ruffin, Alabama Polytechnic Institute extension specialists. The control program, which has been given the name "Goodbye, Mr. Roach," will be carried out by home demonstration and 4-H Club members, civic organizations, and other local groups.

R. M. Hersey

VICE PRESIDENT—R. M. Hersey has been elected a vice president of Bemis Bro. Bag Co., it has been announced by F. G. Bemis, president. Mr. Hersey, who is a director and sales director for national accounts, has his headquarters in Minneapolis. He has been with Bemis since 1914.

INDEX OF ADVERTISERS

Abrasion & Corrosion Engineering Co..... 34
Adams & Doyle, Inc. .....
Agricultural Chemicals Division, Pittsburgh Coke & Chemical Co.....
Agricultural Chemical Equipment Co.....
Allied Chemical & Dye Corp., General Chemical Division .....
Allied Chemical & Dye Corp., Nitrogen Division 40
American Potash & Chemical Corp.....
Anco Manufacturing & Supply Co. .....
Armour Fertilizer Works 37
Ashcraft-Wilkinson Co. 19
Atkins, Kroll & Co. 28

Bagpak Div., International Paper Co. ....
Baker, H. J., & Bro. .....
Baughman Manufacturing Co., Inc. ... 16, 17
Beaird, J. B., Co. .....
Bemis Bro. Bag Co. .....
Bennett Industries, Inc. .....
Blue, John, Co. 33
Bradley & Baker .....
Burkhardt-Larsen Co. .....
Burrows Equipment Co. .....
Butler Chemical Co. 27
Butler Manufacturing Co. .....

Calcium Carbonate Co. .....
California Spray-Chemical Corp. 20, 21
Carlile, J. C., & Associates .....
Chase Bag Co. .....
Chemical Service Corp. .....
Chipman Chemical Co. .....
Clover Chemical Co. .....
College Science Publ. .....
Commercial Solvents Corp. .....

Davison Chemical Co. .....
Deere & Co., Grand River Chem. Div.....
Dempster Mfg. Co. 12
Diamond Alkali Co. .....
Diamond Black Leaf Co. .....
Doane Agricultural Service .....
Donco, Inc. .....
Douglas Chemical Co. 11
E. I. du Pont de Nemours & Co., Inc.....

Eastern States Chem. Co. .....
Export Chemical Corp. of Colorado .....

Fairfield Chemical Division, Food Machinery and Chemical Corp. .....
Fischbein, Dave, Co. 10
Flint Steel Corporation .....
Floridin Company .....
Frontier Chemical Co. .....

Gandrud, E. S., Co. .....
General Chemical Division, Allied Chemical & Dye Corp. .....
Gotcher Engineering & Mfg. Co.....
Grace Chemical Co. .....
Grand River Chemical Div., Deere & Co...

Hahn, Inc. 18
Hammond Bag & Paper Co. .....
Henderson Mfg. Co. .....
Hercules Powder Co. .....
Highway Equipment Co. .....
Hough, Frank H., Co. .....
Hypro Engineering, Inc. .....

International Minerals & Chemical Corp... 7
International Paper Co., Bagpak Div. ....

Johns-Manville Corp. .....

K. B. H. Corporation, The .....
Kelly Ryan Equipment Co. .....
Ketona Chemical Corp. .....
Kolker Chemical Corp. .....
Krause Plow Corp. .....
Kraft Bag Corp. .....

Larvacide Products, Inc. .....
Lebanon Chemical Corp. .....
Lion Oil Co., Div. Monsanto Chem. Co.... 25

The Mackwin Co. .....
Meredith Publishing Co. 24
Wilson & George Meyer & Co. .....
Michigan Chemical Corp. .....
Midstate Machinery Co. .....
Midwestern Spray-Chemical Co., Inc.....
Minco Products Corp. .....
Minerals & Chemical Corp. of America... 15
Mississippi River Chemical Co. .....
Monsanto Chemical Co. .....

National Potash Co. 13
Naugatuck Chemical Div., U. S. Rubber Co. .....
Nelson, Edward S., Ltd. .....
New York Hanseatic Corp. .....
Niagara Chemical Division, Food Machinery and Chemical Corp. .....
Nitrogen Div., Allied Chemical & Dye Corporation 40
Northern Chemical Industries .....

Olin Mathieson Chemical Corp. 33

Pacific Coast Borax Co. 23, 26
Pacific Plastics Co. .....
Pennsylvania Salt Mfg. Co. of Washington 9
Pfizer, Chas., & Co., Inc.....
Phelps-Dodge Refining Corp. .....
Phillips Chemical Co. .....
Phillips Petroleum Co. 10
Pittsburgh Coke & Chemicals Co., Agricultural Chemicals Division .....
Potash Company of America 3
Poulsen Company .....
Powell, John, & Co., Inc.....
Private Brands, Inc. 6

Rapids Machinery Co. .....
Residex Corp. .....
Rieke Metal Products Corp. .....
Riverdale Chemical Co. .....

Savage, K. E., Co. .....
Schrock Fertilizer Service .....
Shell Chemical Corp. 4, 5
Sinclair Chemicals, Inc. .....
Smith-Rowland Co., Inc. .....
Sohio Chemical Co. .....
Specifide, Inc. .....
Spencer Chemical Co. .....
Stauffer Chemical Co. 2
Stewart-Warner Corp. .....
Stoker, H. S., Co. .....
Successful Farming 24

Tennessee Corp. 8
Thompson-Hayward Chemical Co. .....

Umbaugh Agricultural Chemical Co.....
Union Bag and Paper Corp.....
United Petroleum Gas Co. .....
U. S. Phosphoric Products Division, Tennessee Corp. .....
U. S. Potash Co. .....
U. S. Rubber Co., Naugatuck Chem. Div..
U. S. Steel Corp. 31

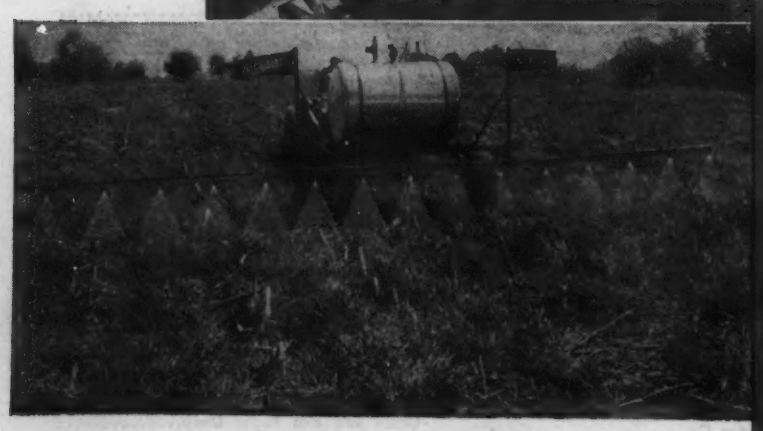
Velsicol Chemical Corp. 29
Virginia-Carolina Chemical Corp. 35
Vulcan Containers, Inc. 37
Vulcan Steel Container Co. .....

Woodbury Chemical Co. .....

SELL THE PROFIT-MAKERS

Arcadian®

HIGH-NITROGEN FERTILIZERS



Profitable for you and profitable for your customers, you sell high-nitrogen fertilizers for every season and every system of application when you handle the famous ARCADIAN line.

This modern line includes liquid and dry nitrogen in nitrate, ammonia and urea forms...quick-acting and long-lasting nitrogen...straight nitrogen and nitrogen balanced with other plant foods.

Every plowed or pastured acre is your market for ARCADIAN products. You sell nitrogen for row crops or sod, dry land or irrigated land, flat fields or rough hills and range. You can supply nitrogen for use in ground spreaders, airplanes, sprayers, injectors, or in irrigation water. You can also sell custom application.

The concentrated, fast-spreading, labor-saving products which carry the well-known ARCADIAN trade-mark enable you to supply the nitrogen needs of every field on every farm. You never turn away a prospect—you make him a satisfied customer!

The most powerful advertising campaign in the history of fertilizer is helping you to build your sales of ARCADIAN high-nitrogen fertilizers. Farm magazines, radio stations and local newspapers are selling the ARCADIAN line to millions of farmers. *Write now for full details!*

Arcadian

POWERFUL ADVERTISING FOR PROFITABLE SALES

NITROGEN DIVISION ALLIED CHEMICAL

NITROGEN DIVISION Allied Chemical & Dye Corporation

New York 6, N. Y. • Ironton, Ohio • Omaha 7, Neb. • Columbia 1, S. C.
Kalamazoo, Mich • Columbia, Mo. • Atlanta 3, Ga. • Indianapolis 20, Ind.
Hopewell, Va. • St. Paul 4, Minn. • San Francisco 4, Cal. • Los Angeles 5, Cal.